

# COLLEGE & RESEARCH LIBRARIES

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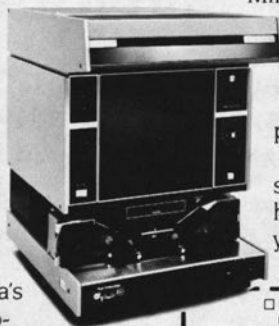
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## “Prove All Things: Hold Fast That Which Is Good”: Deaccessioning and Research Libraries

A FEW PRELIMINARY comments and disclaimers. First, this paper represents work in progress on a subject that admits few absolutes and about which, historically at least, there is much to be learned and many lessons to be gleaned.

Secondly, it should be understood that I am not speaking *ex cathedra* or *ex bibliotheca* for the New York Public Library, but am presenting my personal views of the subject. In a few places I will depart from policies recently established by the library's board of trustees, but we can all agree that in this field there is plenty of room for honest disagreement.

Thirdly, I have approached the problem as a librarian, not as a scholar, collector, dealer, donor, lawyer, trustee, or paper recycler. I hope that my perspective will be clear and only prejudiced by the needs of research libraries.

Finally, this paper is dedicated to the memory of Sir Thomas Bodley. Difficult a benefactor as he may have been to his first librarian, refusing at one point to allow Thomas James to marry, he discovered or encountered in the early 1600s most of the problems of growing research libraries, including deaccessioning. I commend to you his life, his surviving writings, his sound counsel, and his example.

In searching for a title for this talk, I dredged from my memory recollection of a book by a famous Brown scholar, Rosalie Co-

lie, *Paradoxia Epidemica*. That seemed appropriate since the topic of deaccessioning is fraught with paradoxes, oxymorons, and subjectivism.

Equally appropriate might have been Sir Thomas Browne's *Pseudodoxia Epidemica: or Enquiries into very many received tenents and commonly presumed truths* (1646). Along those lines I've chosen instead a text from 1 Thessalonians, chapter 5, verse 21-22: "Prove all things: hold fast that which is good. Abstain from all appearance of evil." Conservative a stance as that may betray, it does summarize very well the essence of a sound deaccession policy, namely, to examine carefully all aspects of disposal decisions on a case-by-case basis, to keep your essential purposes and mission in mind in deciding what to retain and what to discard, and finally, keeping it on the up and up, free of conflicts of interest, lies and evasions, and other forms of evil, apparent or otherwise. For some, the preceding verse 17, might also prove helpful: "Pray without ceasing."

Without troubling at the outset to define the term (perhaps the best thing that could emerge from this conference would be a better term), I would like first to share a few reflections on the nature of the problem, then to provide a taxonomy of deaccessions, to examine the factors that might be involved in making deaccession decisions, and finally to suggest some institutional policy guidelines intended to benefit and protect the institution while avoiding the pitfalls as much as possible.

Obviously, deaccessioning is a hot topic at the moment. The rare-book market is high and institutions are broke. Discussions and rumors throughout the country of mergers of major (and often duplicative) collections and of the sale of entire rare-book rooms inti-

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David H. Stam is the Andrew W. Mellon director of the Research Libraries of the New York Public Library. His article is a revised version of the keynote address presented at the Deaccession Symposium held at Brown University on June 11-12, 1981, and supported by grants from the National Endowment for the Humanities and the Research Libraries Group.

mate, on the one hand, that some institutions are ready to hatch their golden eggs and, on the other hand, that an avalanche of materials may hit the market over a relatively short period, cutting the market down to size and making alloy of many of those nest eggs. The topic is hardly a new one, but publicity over the last decade to the Metropolitan Museum's "Grand Acquisitors," to Boston's George and Martha, to Carnegie-Mellon's coin collection, to Johns Hopkins' Garrett Collection, to Worcester's Stubbs drawings, to threatened sales of art at Warwick Castle and Dulwiche College, to Yale's Brasher Doubloon, and, most recently, to Brown's sale of illuminated manuscripts have whetted the appetites of some institutions and honed the consciences of many individuals. The issue often exposes institutional vulnerability and brings out the more mordant sensibilities of the critic. At the height of the Gilbert Stuart controversy, for example, *ARTnews* sympathetically cited the suggestion of a Boston reporter that the solution was for Boston to keep the paintings and sell the Athenaeum. You also may remember a 1973 article in *Art in America* entitled "Should Hoving Be De-Accessioned?"<sup>1</sup> Those examples are mildly satiric compared to the more invidious innuendo of the rare-book salons intended to exalt the true bibliophile and debunk the bibliophilist.

How can we analyze objectively the nature of a problem that brings out so many hostile emotions on either side, for whatever sincere and/or self-serving purposes? Part of the problem, I suspect, is a widespread cultural belief in the sacredness of the book, the printed word, and even the written word. We're told it was there in the beginning, and, by God, no one ought to desecrate it, and that includes moving a book from one library to another. Every librarian has been burned by that issue, having discarded or transferred something that someone else thinks valuable. But there is an opposite tradition to the cult of the book and it can appear in the deaccessioning argument. How many of you believe that the burning(s) of the Alexandrian Library were a good thing? You may be surprised to learn that among those who did or would have were Seneca, Caesar, the Caliph Omar, Edward Gibbon, Louis LeRoy, Sir Thomas Browne, Jean Jacques Rousseau, David

Hume, Jacob Burckhardt, Friedrich Nietzsche, George Bernard Shaw, and, I suppose by extension, the late Marshall McLuhan.<sup>2</sup>

Browne, for example, has this passage in *Religio Medici*:

I HAVE heard some with deepe sighs lament the lost lines of *Cicero*; others with as many groanes deplore the combustion of the Library of *Alexandria*; for my owne part, I thinke there be too many in the world, and could with patience behold the urne and ashes of the *Vatican*, could I with a few others recover the perished leaves of *Solomon* . . . [Would] that there were a generall Synod; not to unite the incompatible differences of Religion, but for the benefit of learning, to reduce it as it lay at first in a few and solid Authours; and to condemne to the fire those swarms and millions of *Rhapsodies*, begotten onely to distract and abuse the weaker judgements of Scholars, and to maintaine the Trade and Mystery of Typographers.<sup>3</sup>

More caustic is Shaw's dialogue in Act II of *Caesar and Cleopatra* where Alexandria is under siege and burning:

*Theodotus* [on the steps, with uplifted arms]. Horror unspeakable! Woe, alas! Help!

*Rufio*. What now?

*Caesar* [frowning]. Who is slain?

*Theodotus* [running down the hall between them]. The fire has spread from your ships. The first of the seven wonders of the world perishes. The library of Alexandria is in flames . . .

*Caesar*. Is that all?

*Theodotus* [unable to believe his senses]. All! *Caesar*: will you go down to posterity as a barbarous soldier too ignorant to know the value of books?

*Caesar*. *Theodotus*: I am an author myself; and I tell you it is better that the Egyptians should live their lives than dream them away with the help of books.

*Theodotus* [kneeling, with genuine literary emotion: the passion of the pedant]. *Caesar*: once in ten generations of men, the world gains an immortal book.

*Caesar* [inflexible]. If it did not flatter mankind, the common executioner would burn it.

*Theodotus*. Without history, death would lay you beside your meanest soldier.

*Caesar*. Death will do that in any case. I ask no better grave.

*Theodotus*. What is burning there is the memory of mankind.

*Caesar*. A shameful memory. Let it burn.

*Theodotus* [wildly]. Will you destroy the past?

*Caesar*. Ay, and build the future with its ruins.

In our debate this side of the argument can



appear in the pragmatic question of why we should keep all that junk, or in Caesar's argument that it's better to live lives than dream them away with books. When the British Museum in 1933 acquired the Codex Sinaiticus Petropolitanus from the Russian government for £100,000, there were loud protests about spending that much money when there were one million unemployed in England. The extent of such arguments today should not be underestimated.

In addition to the cult of the book, there is also the question of the transience of immortality. Sir Thomas Bodley has fared well in this respect (despite some changes in his policy regarding duplicates), but there is a deep-seated fear that bequests violated will cease to perpetuate the memory of the donor. An institution that fails to honor either the legal requirements or the less formal wishes of its donors can easily alienate other potential benefactors. We shall return to that problem later.

Shortly after the British Museum opened its new quarters in 1759, Thomas Gray, the elegist, wrote to James Brown of the quiet solitude of the reading room:

... when I call it peaceful, you are to understand it only of us Visitors, for the Society itself, Trustees, & all, are up in arms, like the Fellows of a College, the Keepers have broke off all intercourse with one another, & only lower a silent defiance, as they pass by ... moreover, the trustees lay out 500£ a year more than their income; so you may expect, all the books & the crocodiles will soon be put up to auction. the University (we hope) will buy.

August 8, 1759<sup>5</sup>

History is studded with disastrous dispersals, usually emerging from disastrous circumstances (e.g., the dispersal of Charles the First's art collections, the seizures of the Napoleonic wars, the sales by the Soviet government after the revolution, the plunder and destruction of entire libraries in the Second World War). One of the disastrous circumstances is financial and the problem is not new, prevalent as it is today.

The argument for sale is posed in this way: How can a library justify or afford the retention of valuable assets when it cannot keep its doors open sufficient hours, balance its budgets, preserve what it already has, and keep its collections growing in the most useful way? A \$1,000,000 volume consulted

once a year costs at least \$60,000 per use. Couldn't that be put to better institutional purposes? Compelling as that argument may be to some, it negates the very idea of a research library. Wilmarth Lewis addressed the intellectual side of this argument in his *Collector's Progress*:

It doesn't bother me in the least that in the future many of my books will stand unopened for many years on end. Counting the number of times a book is used as a criterion of value is to reduce a research library and its purposes to absurdity; on that basis the most valuable books in it are its telephone books. Every great library has tens of thousands of books that may not be called for once in a decade. Paradoxically, it is these books that make it great.<sup>6</sup>

There are several other issues that make deaccessioning problematical: the speculative nature of the market; the subjectivity of many of the judgments involved; the real threat to people's livelihoods or reputations; the effects of fluctuations in scholarly fashions; the balancing of the needs of growth over and against the needs of preserving and caring for what we already have; the possible removal of material from public or local access; and the many ethical questions involved<sup>7</sup>—all of these amply demonstrate the difficulties involved in deaccessioning.

Before turning to the factors that should be considered in a comprehensive deaccession policy, a few brief words should be said about various types of deaccessioning. I've come across the following nine types and would welcome suggestions of others:

1. The Deaccession Nugatory—throwing away the useless. An absolute necessity in all libraries, no matter how difficult the judgments involved.

2. The Deaccession Rapacious—loss by plunder and looting (cf. Napoleon and Hitler).

3. The Deaccession Inadvertent—loss by mistake. Probably the best known example is the Bodleian First Folio.

4. The Deaccession Censorious—e.g., the great deprivations first of the English Reformation and the subsequent loss of many reformed works in the Marian reign.

5. The Deaccession Mendacious, Covert or Mysterious—no successful examples, by definition, but we all know of such cases.

6. The Deaccession Incendiary—a method recommended by Caliph Omar,

David Hume, and a number of School Boards in the USA.

7. The Deaccession Extraneous—weed-ing. Not recommended for large research libraries.

8. The Deaccession Duplicative—weed-ing of second copies, often by sale.

9. The Deaccession Remunerative—the sale of assets for money or exchange.

With respect to the last two types, and especially the deaccession by sale, transfer, or exchange of valuable books and other assets for other institutional purposes: What must be taken into account in deciding to pursue this course?

Since the most obvious and least problematical source of revenues through sales is by disposal of valuable duplicates, I will deal at some length with that issue and then much more briefly with many of the other questions involved in deaccession decisions. Duplication in itself is not a bad thing and, in fact, is an essential component of any university library collection policy, designed to provide sufficient copies of much-used books for student use. "Two are better than one," says the author of Ecclesiastes (chapter 4, verse 9) in a passage that seems more relevant to resource sharing than to the vain accumulation of treasures. On the other hand, the same author later claims that "money answereth all things" (Eccles. 10:19) and the sale of duplicates for some institutions could be the answer.

The trustees of NYPL recently had an extensive debate over the phrase "undoubted duplicate," one side arguing that important variants could be lost without careful comparison of copies to assure true duplication, the other that too strict a definition would prevent any significant action. Falconer Madan's paper, "Duplicity of Duplicates," read to the Bibliographical Society in 1911, took the conservative approach: "I do not advocate the collection of duplicates (that way madness lies), but I do advocate . . . the greatest care in getting rid of them when you think you have them."<sup>8</sup>

Madan's point was that there are very few true duplicates of pre-1800 hand-printed books. Fredson Bowers, in a 1966 essay, extends the argument to machine-printed books and implies the need to follow Madan's way to madness:

If a library is to serve advanced bibliographical scholarship applied to machine-printed books, it must collect broadly what appear to be duplicates of the "first edition," else the evidence will never be assembled for the detection of concealed printings that cannot be distinguished by the conventional evidence of binding-variation or of so-called "points," but by the expert use of the Hinman Collator. In addition, it must forsake the collector-fostered cult of the first edition in favor of the assembly of every ascertainable later printing or edition—I assert—even down to the twenty-fifth printing in paperback form.<sup>9</sup>

Quite apart from the fact that research libraries have other constituencies to serve besides that of advanced bibliographical scholarship, one wonders how many libraries he thought should duplicate this effort of duplication.

In a less sophisticated bibliographical age, Sir Thomas Bodley took a more practical approach to what he called "double books," though his view of "superfluous books" as described in his letters and in the original statutes of the Bodleian Library should and has been challenged. Bodley was concerned that all books given to the library be in fit condition and even expected donors to defray the cost of binding or repair. When this wasn't possible, he advised his librarian, "It will be requisite to take bookes, that we haue already, whereby those charges may the better be defraied" (i.e., the cost of binding could be covered by the sale of duplicate books).<sup>10</sup>

A short time later in France, Gabriel Naudé's *Advice on Establishing a Library* (*Avis pour dresser une bibliothèque*), first published twenty-five years later, also alluded to the subject of duplication. It calls for alphabetical author catalogues in any library, "first that duplication may be avoided, and second, that gaps may be detected."<sup>11</sup>

For quite other reasons, Robert H. Taylor in a paper read to the Bibliographical Society of America in 1954, argued "the importance of *not* having multiple copies."<sup>12</sup> His concern was the increasing flow of good books into institutional libraries and thus their disappearance from the market and the thwarting of the collector. I'm sure some of you have observed in the memoirs and biographies of rare-book dealers how materials acquired as unwanted duplicates of libraries were often sold to other libraries as the most significant

of variants. I do not disparage the role of dealer or collector in discovering what went unobserved by the librarian, either for ignorance, lack of interest, or the press of other important business. Nonetheless, one cannot totally suppress the sense of disingenuousness in some of the sales techniques.<sup>13</sup>

Parenthetically, I should point out that the New York Public Library has a rather checkered history of duplicate sales, a history that begins before the formal consolidation of the Astor and the Lenox libraries in 1895. We have at the library two bound volumes of priced auction sale catalogues involving duplicates resulting from the merger. They make fascinating browsing and deserve a thorough study by someone more knowledgeable than I. The first sale, on April 29, 1895, at Bangs Auction House, consisted of duplicates from the Lenox Library and brought a net credit to the trustees of \$5,068.43. Those trustees included such luminaries as Samuel Avery, Nicholas Murray Butler, Charles Scribner, and John S. Kennedy, president.

Hindsight isn't much help, but I wish we still had some of the books that passed in those early sales, if only for investment purposes. Audubon's *Folio Birds* brought \$192.50; the *Quadrupeds* \$151.50; Baskerville's *Terence*, \$1.00; George Bancroft's own copy of his six-volume *History of the United States*, 65 cents; and 118 volumes uniformly bound of the *Quarterly Review* (1809-1865), 15 cents. The sales continued through 1920, twenty in all, with the majority occurring before the move of the two libraries into the new building in 1911.

H. P. Kraus notes in his autobiography that he was able to buy from the library 12,000 to 15,000 duplicate titles from the Wilberforce Eames Collection, bequeathed to the library in 1937, for \$1,000: "This gave me the start of the reference library I sorely needed and also established me as a dealer in 'books about books.'" <sup>14</sup> I doubt that such a sale would be approved today. The tradition of duplicate sales, however, is not dead and the library intends, for example, to sell a number of music "duplicates" at auction this fall. I'm sure we can expect to win some and lose some in that speculative enterprise.

Without having solved the problem of what a duplicate actually is or which kinds

are unnecessary to a research library, let me turn to the many other factors that must be taken into account in making deaccession decisions.

First and foremost must be the question of what your institution is attempting to do and whether the continued retention of certain materials, whether duplicate or not, is in keeping with that mission. Naturally, a library must be protected against the whims and foibles of capricious changes while being flexible enough to change to accommodate new needs. Irreparable damage can be done by either rigid inflexibility or excessive pliability.

Equally important is the legal probity of any proposed sale. A library must assure its clear title, unencumbered by restrictions that prevent sale or other disposition. If retention of legally restricted material is clearly in conflict with your institutional purposes, you may consider and pursue *cy pres* proceedings to change the legal restrictions. The New York Public Library did just this in the 1940s in order to transfer to the New-York Historical Society and the American Museum of Natural History collections of paintings and seashells from the Stuart Collection. One provision of the Stuart bequest, that materials in the collection not be exhibited on the Lord's Day, was removed by the *cy pres* proceedings for the collections transferred but remain in effect for the book collections, including many Bibles, which we retained.

Apart from legal restrictions, it is both a matter of good conscience and of good policy to honor, as far as resources permit, the intentions and wishes of the donor's gift or bequest. Even where sales are legal and desirable, the library should assure that resulting revenues be used in conformity with the donor's original intentions.

The library should also ascertain to the best of its ability the uniqueness, rarity or scarcity of materials being considered for disposal and assess the possible effects of dispersal on the access of the scholar or a more general public to the material. If an accession, by definition, makes something accessible, we should remember that a deaccession may make that item inaccessible. This is a particular problem with archival collections where a decision to discard is often irrevocable and the material is lost forever, though



usually no proceeds are involved.<sup>15</sup>

Enough has been said already about duplicates, except to add that redundancy within the collection considerably enhances the case for disposal. Equally important is the relationship of the given item to the library's collecting policy, whether in scope or out of scope. Any responsible library will have the scope of its collecting policy under constant review. It is also certain to have many materials that are clearly out of scope, though there will always be arguments on the fringes, usually along the line that anything is grist for the social historian's mill, e.g., the current vogue of ephemera. At the New York Public Library, for example, we have such materials as paintings, stamps, coins, sea-shells (on loan), commemorative medals, and other three-dimensional objects. Each category will need a separate assessment to determine the probity of disposal (e.g., our stamp collection is both world famous and tied up by clear legal restrictions).

Having passed these various tests, we must next speculate on the net value of the possible sale, the potential yield less the real costs of deaccessioning (identification, processing, and legal), as well as the potential appreciation of the asset if retained as an investment. Perhaps the market can never be accurately anticipated, but a most painful example of the latter point was the sale by the New York Public Library, in 1956, of ten paintings, mostly from the Lenox Library, including two Turners, two Reynolds, a Constable, a Gainsborough, a Vernier, and a few others for \$150,000. One of the Turners was the first to come to this country, and its acquisition for Mr. Lenox was recounted at some length by Henry Stevens in his *Recollections of James Lenox*.<sup>16</sup> The sale of those paintings was a gamble that seems now to have been a bad one.

Another question concerns the responsibilities of an institution to maintain collections that are clearly identified with it. Should a library dispose of items which, sometimes flatteringly and sometimes pejoratively, are referred to as the crown jewels or treasures, which might bring a great price but are considered to carry an obligation with them to preserve and display? The New York Public Library has any number of such items, ranging from the manuscript of Washington's

Farewell Address to the Library Lions.

On a more mundane level but also important is the effect of removal on the so-called integrity of bibliographical records. Computer records of recent years can easily be updated to reflect changed holdings but book catalogs distributed throughout the world (including the pre-1956 National Union Catalog) will suggest the presence of works long since departed. Should that fact affect the institutional deaccession policy?

Is there exhibition potential in the item, which might be used for aesthetic, educational, or promotional purposes related to the primary purposes of the institution?

What effect might the present condition of the item have on a decision to remove? Should a library acquire and possess materials that it cannot preserve in good condition? Would it not be better to place the material in the hands of those who care enough about the item to pay for it?

Are there factors of space availability, peculiar processing requirements, or unusual security needs that would influence the decision one way or another?

What will be the public relations implications of the sale of specific library holdings?

What importance should be placed on unique bindings or association copies?

Most of these questions must be addressed on a case-by-case basis and the answers will vary dramatically. I have left the most difficult question to the end because the answer will depend not so much on individual cases but on perceived patterns of institutional behavior. I refer, of course, to the effects of deaccessioning on prospective donors and benefactors. This is a difficult question, fraught with imponderables, including exaggerated threats of the unlikely. Let me provide two examples of the problem.

The British Museum in its early years through 1830 was often plagued by the problem of duplicate disposal, partly from the pressure of Parliament to curtail the museum's space needs, partly from the alienation of potential gifts. The *Quarterly Review* for December 1850, in a lengthy review of various reports on the state of the museum, included the following passage:

Nor was this all; the neglect shown, and the sale of duplicate books, disgusted many persons of sound and disposing mind, who, if 'things had been bet-



ter managed, as in France,' would have bequeathed their stores to the national institution. To cherish what he has created, to desire to secure the intact preservation of these love-labours of his life, is natural to man; nor is the ambition to make a name — *non omnis moriar* — by making the public the heir to private treasures, an unpardonable or unpatriotic pride. Here this yearning has been chilled rather than fostered: can it be wondered that Lord Fitzwilliam (obit 1816), who intended to have bequeathed his collections to the Museum, should, on learning they were liable to be sold or lost, hand them over to the better taste and custody of Cambridge; or 'Northern Saxon' Gough, should select the Bodleian for the asylum of their precious accumulations? So Soane steered clear of the careless triton of Great Russell Street, in order to found his minnow Museum in Lincoln's Inn Fields; so Kirby the entomologist, fearful of 'basements,' took especial care that his beloved specimens should escape slow putrefaction and rapid cremation.<sup>17</sup>

Mr. Lenox himself in the 1840s had made desirable exchanges with the museum through the efforts of Henry Stevens, including "the last enterprise of its kind which Mr. Panizzi was permitted to effect. . . ."<sup>18</sup> Perhaps the museum had enough problems of its own to be concerned with and needn't have begrudged Oxford and Cambridge their good fortune. The answers to the questions raised are truly speculative.

The second example is closer to home and equally speculative. On June 10, 1950, less than two weeks before his death, Dr. Albert A. Berg added the following codicil to his October 1949 last will and testament, which endowed his collection and other materials to the New York Public Library:

I make the provision in Paragraph marked "THIRTY-NINTH" of my said Last Will and Testament absolutely and unalterably conditioned upon the agreement by the Trustees of the New York Public Library not to sell, trade, exchange, barter, or in any manner whatsoever to transfer or allow to be transferred any books, manuscripts, papers, letters, illustrations, writings and art objects now in the Collection heretofore referred to, or which at any time may be added to said Collection. And I further provide that if at any time during the continuation of the trust herein provided the Trustees of the New York Public Library shall sell, trade, exchange, barter, or in any manner whatsoever transfer or allow to be transferred any books, manuscripts, papers, letters, illustrations, writings and art objects in the Collection hereinbefore referred to, then the bequest made in Para-

graph marked "THIRTY-NINTH" of my said Last Will and Testament for the use and purposes therein set forth shall be revoked and the entire principal of said trust fund shall be forfeited by the Trustees of the New York Public Library and become the sole and exclusive property of the University of Pennsylvania, situated at Philadelphia, Pennsylvania, for the establishment of a library of valued old books, manuscripts, papers, writings and objects of art to be known forever as the BERG COLLECTION in memory of Henry W. and Albert A. Berg.

What happened to cause Dr. Berg's deathbed resolve to create such a restrictive legacy after many years of dealing with the library? It is doubtful if the full story could ever be reconstructed, but we do know that on February 8, 1950, Dr. Berg attended a meeting of the Board of Trustees of the New York Public Library at which the following resolution was approved:

*Approval of the sale of "A Description of the Villa of Horace Walpole"*

Upon recommendation from the Library Committee, and on motion duly made and seconded, the Board voted to authorize the sale from the Spencer Collection of "A Description of the Villa of Horace Walpole," with notes in Walpole's hand, for \$2,000 to Mr. Wilmarth Lewis whose Walpole Collection will be bequeathed to Yale University.<sup>19</sup>

No votes were recorded but oral tradition claims that Dr. Berg was silent throughout the discussion.

There is no doubt that the transfer was an honorable one, made with good intentions on both sides. Yet I cannot help but be reminded of an epithet of my eponymous benefactor, Andrew W. Mellon, to the effect that "no good deed goes unpunished." We can only speculate that Dr. Berg, horrified at the sale of a unique item from another endowed collection, did his best to protect his own name and collection. As a result, the Berg Collection, which might otherwise have sold its duplicates, now contains a splendid collection of literary duplicates, among them two *Tamerlanes*, two of Browning's *Pauline*, two of Bryant's *Embargo*, three Kilmarnock Burns', six or seven *Pickwick Papers* in parts, four of Bronte's *Poems*, nine copies of *The Scarlet Letter*, eleven of *The House of Seven Gables*, and five presentation copies of Thoreau's *A Week on the Concord and Merrimack Rivers* — those presented to W. C. Bry-

ant, Ellery Channing, R. W. Emerson, James A. Froude, and Nathaniel Hawthorne.<sup>20</sup> With that level of duplication, one can only imagine what the library's \$2,000 deaccession cost the Berg Collection and the library in potential support for growth in other areas of the Berg Collection.

I will pass over completely the question of the appropriate methods of sale or disposition and conclude with a few policy guidelines needed to control a responsible deaccession program. The board of trustees have recently approved tentative guidelines for the New York Public Library; they may be useful to other institutions facing the same questions and needs.

First, all proceeds from sales will be placed in restricted endowments, the income of which will be used for the strengthening or preserving of the collections.

Second, in general, inferior or lesser copies

of duplicates should be the copies sold. Careful examination should determine true duplication.

Third, the library will scrupulously honor the conditions under which gifts or bequests were accepted.

Fourth, the board of trustees is responsible to assure the best possible return on the sale of its assets.

Fifth, in general, manuscripts and association copies should be retained.

Sixth, emphasis in sales should be placed on out-of-scope and unrelated materials.

Seventh, the library will make full public disclosure in advance of its intended transactions.<sup>21</sup>

Those are the seven commandments we are now living with. Perhaps others can add three more to complete a Deaccessioning Decalogue.

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BARBARA MOORE, TAMARA J. MILLER,  
AND DON L. TOLLIVER

## Title Overlap: A Study of Duplication in the University of Wisconsin System Libraries

*It has been commonly believed by many in the profession as well as many of those who fund library programs that collection duplication is exceedingly high across comparable libraries that support similar user needs. Devising efficient ways of assessing duplication, or overlap, among libraries was difficult prior to the availability of archival tapes from bibliographic utilities. Most collection overlap studies were conducted drawing samples from card catalogs or order slips. This paper outlines the results of a study of collection overlap for the University of Wisconsin System libraries. OCLC archival tapes covering the time period July 1977-June 1979 provided two years of cataloging data. More than 392,000 monograph records created by the cataloging activities of eleven libraries were compared to determine duplication rates. Findings based on analyses of these cataloging records are discussed.*

**E**CONOMIC CONDITIONS and inflation have created an environment of increasing costs and dwindling budgets, forcing university and library administrations to rethink library program priorities. Today, few, if any, university libraries enjoy a real growth in purchasing power. Inflation is affecting not only the actual costs of books but also the dollars required to handle, process, and house materials. A sense of alarm has developed and universities have taken a variety of steps to meet the challenge.

One strategy for lessening the impact of inflation on libraries is to reduce duplicate

book purchases. This policy can be administered rather easily in single collection libraries. However, such a policy is somewhat more difficult to implement across a number of libraries. Nonetheless, libraries are now examining cooperative collection development agreements. Cooperative collection development allows two or more libraries to establish purchasing agreements that reduce duplication in specific areas. Under such a plan, some materials are purchased and housed in only one library and are made available to other member libraries.)

The assumptions supporting this approach are based on the belief that collection duplication is exceedingly high from library to library. Thus by monitoring and, when feasible, controlling duplicate book purchases, the impact of budgetary downturns and inflation may be lessened. Of course, it also has been argued that some unspecified level of duplication is necessary to provide acceptable library service at each university location.

The University of Wisconsin (UW) System

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*Barbara Moore is systems librarian, Library and Learning Resources, University of Wisconsin-Whitewater. Tamara J. Miller is head, Library Systems, University Libraries, University of Tennessee-Knoxville. Don L. Tolliver is assistant director for planning and budget, University Libraries, University of Michigan, Ann Arbor. The authors would like to thank Atlee Scanoe, University of Wisconsin-Whitewater, who spent many long hours writing and running the computer programs.*



created a Library Planning Study Committee (LPSC) in 1978 to undertake a comprehensive study of the libraries in the UW System. Some of the issues addressed by the LPSC were the need for adequate housing for growing library collections; the potential for cooperative library activities; the feasibility of coordinated acquisitions; and the need for resource sharing. In order to fully address these issues, the LPSC required detailed information about the current overlap in acquisitions of the UW System libraries. Much of the work of this overlap study was sponsored by the LPSC.

#### LITERATURE REVIEW

Collection overlap studies among libraries have largely been conducted through sampling techniques. Information has been gathered from card catalogs, order slips, or archival tapes provided by a bibliographic utility. While there have been several studies of title overlap, only Nugent has assessed both current acquisitions and total holdings. He found a 40 percent title overlap across the holdings of six New England state university libraries. This figure increased to 47 percent when only current imprints were examined.<sup>1</sup>

Cooper, Thompson, and Weeks investigated the degree of title overlap among nine University of California campuses. Their study found that 25 percent of the titles held at Berkeley were duplicated on at least one of three other northern campuses, and 44.9 percent of the University of California at Los Angeles titles were duplicated on at least one of four other southern campuses.<sup>2</sup>

In a study of Canadian additions libraries, Dingle-Cliff and Davis noted that 76 percent of the seventy-one titles with imprints of 1969 or later were found in at least two libraries.<sup>3</sup> Altman found a 52 percent title overlap among thirty-one school libraries.<sup>4</sup> She stated, "This finding refutes the assumption that school library collections are basically similar."<sup>5</sup>

By sampling orders placed from libraries in the London University System, Urquhart and Schofield found an overlap of 15 percent.<sup>6</sup> Parker also examined the amount of overlap in acquisitions of five member libraries of the Consortium of Universities of Metropolitan Washington. He reported that 61 percent of the orders were duplicated with

a rate of 2.24 copies per title.<sup>7</sup>

All of the above studies relied on samples drawn from card catalogs or order records. Evans, Gifford, and Franz reported that the State University of New York (SUNY) Central Administration Office of Library Services used the machine-readable bibliographic records (OCLC magnetic tapes) of four member libraries to assess title overlap. This study was part of an overall analysis of OCLC tapes completed to determine collection development practices. Unique OCLC record numbers were compared for a twelve-week cataloging period. It was found that 86.7 percent of 25,622 titles on the tapes were owned by only one library. Only 13.3 percent of the titles were held by more than one library.<sup>8</sup>

#### UNIVERSITY OF WISCONSIN SYSTEMS LIBRARIES

The University of Wisconsin System has approximately 150,000 students enrolled at thirteen degree-granting universities and fourteen freshman-sophomore centers located throughout the state of Wisconsin. All but two of the thirteen libraries at degree-granting universities were using the OCLC system as a means of cataloging in 1979. The cataloging transactions for these eleven libraries were routinely recorded on magnetic tape and maintained by the Wisconsin Library Consortium. This wealth of data provided an excellent opportunity for an expanded overlap analysis similar to the SUNY study.

All eleven of the UW libraries included in the study serve undergraduate students. In addition, most offer graduate programs, with UW-Madison and UW-Milwaukee providing extensive doctoral programs. Although the nine nondoctoral universities offer similar core course programs, many have focused curriculum specialties, e.g., business, applied technologies, agriculture, home economics, etc.

The magnetic tape cataloging data was complete from the date each library began using OCLC. However, four of the libraries studied were not online during portions of the two-year period studied. Table 1 details the total number of transactions, number of titles, and the dates covered for each of the UW libraries included in the study.

TABLE 1  
UNIVERSITIES AND TITLES INCLUDED IN TITLE OVERLAP STUDY

University of Wisconsin Campus	Monograph Records on OCLC Tapes 7/1/77-6/30/79	Records Used after Collapse Regardless of Imprint	Records Used after Collapse with Imprints 1976-79
Eau Claire	32,764	30,639	20,252
*Green Bay	57,346	54,648	9,407
*LaCrosse	11,380	11,004	7,089
†Madison	129,732	113,740	71,122
Milwaukee	64,986	57,758	36,313
Oshkosh	26,393	24,875	19,607
*Parkside	11,768	10,769	7,315
*Platteville	9,016	8,824	4,061
*River Falls	7,597	7,145	4,355
Stout	20,701	18,441	11,195
Whitewater	23,333	19,710	13,843
Total records	392,016	357,553	204,559
Total titles		267,979	124,774

\*Online status: Green Bay: retrospective conversion project under way; LaCrosse: online Dec. 1977- ; Parkside: identifiable retrospective records eliminated prior to collapse programs; Platteville: online Feb. 1978- ; River Falls: online June 1978- .

†Includes the Wisconsin State Historical Society from Dec. 1977- ; Instructional Materials Center, Health Sciences and Law Libraries.

## METHODS

OCLC archival tapes for the UW System for the time period July 1, 1977, through June 30, 1979, were used. Two years of cataloging data were examined to minimize the effect of purchasing and/or cataloging delays. The twelve-week time period used in the SUNY study was viewed as too short, as the authors of the SUNY report had warned: "The presence of 'unique' records (those held by exactly one institution) is suspect because it is unusually high and similar for all institutions. It is due to the short time period analyzed, the difference in cataloging practices at the four institutions, and the relative timeliness of the different selection and acquisition processes."<sup>9</sup>

The archival tapes contain a full bibliographic description, OCLC unique control number, and a library identification code for each cataloging transaction (produce, update, replace, and cancel) completed by each library. The tapes do not contain uniform data for each library. Local practice for cataloging various types of materials and special projects (retrospective conversion of old cataloging and reclassification) are reflected on the OCLC tapes. Thus, all identifiable retrospective conversion records were excluded. Also, serial records were excluded from the study since several UW System libraries do not catalog these materials.

The UW System study differs from most of

the previously cited studies in that government documents, musical scores, and audiovisual and instructional materials were included. While the inclusion of serials would likely effect the results, it was felt that the large sample size would reduce the impact of these nonstandard items. Indeed, only 2 percent of the titles analyzed were audiovisual or instructional materials.

All titles, regardless of imprint date, were used for the first analysis. A second analysis was done using a smaller group of titles with publication dates from 1976 to 1979. The examination of current imprints diminished the possibility of artificially high rates of unique titles due to cataloging backlogs, unidentified retrospective cataloging, reclassification, and time lags in purchasing materials. While the analysis of current imprints provided a better indication of the overlap in current acquisitions among the eleven UW libraries, it ignored those materials that were currently purchased for special, rare book, and other collections made up of older imprints. Thus, the results of the two analyses represent two extremes of overlap.

The following items were extracted from each archival tape record: the unique OCLC control number, the three-character library identification code, and the first two letters of the LC classification number (discipline code). All eleven libraries use the Library of Congress classification scheme. The discipline code was taken from either the local LC

call number (090) or national LC call number (050) field. Of the total records processed, 6.1 percent did not contain an LC call number and were excluded only for the analysis by discipline.

These twelve-byte records were sorted by OCLC control number and by library location within OCLC control number. A collapse program was run to eliminate all but the most recent occurrence of a record with the same OCLC control number and library location code. The collapse program combined all UW-Madison locations, including the Wisconsin State Historical Society, thereby eliminating the duplicates found among these campus libraries. Further, the collapse program eliminated all duplicate records created by a single library. These records may represent multiple copies, corrections to previous cataloging, or cancel transactions (to withdraw a title). The results of the collapse are found in table 1.

Title overlap frequency programs were then run to compare the numbers of remaining location codes for each title. Five categories of overlap comparisons were completed: (1) among all eleven university libraries; (2) between the two university libraries serving doctoral and nondoctoral universities; (3) among the nine university libraries serving nondoctoral institutions; (4) between university libraries serving doctoral and nondoctoral universities; and (5) among all university libraries by four disciplines.

All comparisons were done for all titles regardless of imprint date. Only the first three

comparisons were repeated for titles having an imprint date of 1976-1979.

#### FINDINGS

Comparison of the 267,979 records created by the cataloging activity of the eleven UW libraries from July 1977 through June 1979 revealed that only 18.16 percent of these titles had two or more location codes and 1.05 percent had six or more location codes. The percentage of titles overlapped increased to 31.99 percent for two or more locations and to 2.24 percent for six or more locations when only current imprints were compared. Table 2 details the overlap among titles for both comparisons.

The actual overlap in currently cataloged materials falls between these two figures, 18.16 percent and 31.99 percent, for titles held in two or more locations. The actual number of titles with six or more locations differed by only eleven titles between the two comparisons. The low overlap among all titles cataloged confirms the SUNY findings.<sup>10</sup>

These findings indicate that the level of title duplication among all the UW libraries was much lower than previously assumed. Since this study relates to currently cataloged material, it does not necessarily serve as an indication of total collection overlap among the libraries studied.

The data for each individual UW library compared with the rest of the UW System libraries studied are given in table 3. The percent of overlap was higher for any single library than for the group as a whole. The large-

TABLE 2  
COMPARISON AMONG ALL UNIVERSITIES

	Titles	Percent	Cumulative Percent
<i>Comparison of All Titles Held*</i>			
By one univ.	219,327	81.84	
By two univ.	28,863	10.77	92.61
By three univ.	9,132	3.41	96.02
By four univ.	5,012	1.87	97.89
By five univ.	2,833	1.06	98.95
By six or more univ.	2,812	1.05	100.00
<i>Comparison of Current Imprints held (1976-79)†</i>			
By one univ.	84,860	68.01	
By two univ.	20,967	16.80	84.81
By three univ.	8,443	6.77	91.58
By four univ.	4,898	3.93	95.51
By five univ.	2,805	2.25	97.76
By six or more univ.	2,801	2.24	100.00

\*Three titles were held in all eleven university libraries.

†No titles were held in all eleven university libraries.

TABLE 3  
PERCENT OF UNIQUE TITLES IN EACH UNIVERSITY LIBRARY

University of Wisconsin Campus	All Titles Cataloged		Current Imprints	
	Titles Cataloged	Percent Unique	Titles Cataloged	Percent Unique
Eau Claire	30,639	45.95	20,252	28.57
Green Bay*	54,648	80.03	9,407	22.42
LaCrosse	11,004	46.63	7,089	27.56
Madison	113,740	72.85	71,122	61.91
Milwaukee	57,758	57.99	36,313	39.37
Oshkosh	24,875	34.30	19,607	22.62
Parkside	10,769	37.07	7,315	18.65
Platteville	8,824	53.32	4,061	21.79
River Falls	7,145	46.13	4,355	24.75
Stout	18,441	57.45	11,195	40.39
Whitewater	19,710	45.22	13,843	31.76

\*The figures for the comparison of titles regardless of imprint date for UW-Green Bay included retrospective conversion records that were unable to be identified and eliminated.

est library, UW-Madison, had the lowest overlap rate with 38.09 percent of its current imprints duplicated elsewhere in the UW System. The smaller libraries (14,000 titles cataloged or less) tended to have considerably larger overlap rates for current imprints, with an average of 73.24 percent. This confirms Davis and Shaw who found that, "the larger the library from which the sample is drawn, the more likely it is to have material that is either esoteric or of only local interest."<sup>11</sup>

Since the two largest libraries studied are also the two libraries that serve doctoral-degree-granting universities, a series of comparisons were run with the doctoral and non-doctoral groups. The overlap comparison between the two groups shows that 11.63 percent of all titles cataloged during the period were held by at least one library in each group. Table 4 presents these results.

Comparisons were also done within each group. Between the doctoral universities (UW-Madison and UW-Milwaukee), 10.85 percent of all titles cataloged were duplicated. When only current imprints were con-

sidered, the figure increased to 17.41 percent. Among the nine nondoctoral universities, 17.29 percent of all titles cataloged were duplicated by at least two libraries in the group. Current imprint overlap was 34.85 percent. (See tables 5A, 5B.)

As expected, the overlap among the smaller, nondoctoral group was higher than the overlap between the larger university libraries. This difference may be the result of the similarity in basic freshman and sophomore courses offered at the nondoctoral universities as well as the diversity of the academic programs at the doctoral institutions. The results, however, may be simply a function of current purchase volume.

Comparisons were also done for all eleven libraries in four basic academic subject areas. Analysis was done on all titles cataloged during the period, eliminating only those records without LC call numbers. Discipline codes were assigned as given in table 6. The general literature material showed the most duplication, with 24.13 percent of the titles held in two or more libraries, followed by science with 23.07 percent, social science with 19.89 percent and history with 17.08 percent duplication. These four disciplines had similar lower levels of overlap than anticipated for basic subject areas.

Thus, overlap was surprisingly low in all five comparisons for the UW System libraries. In an effort to further understand the nature of these results, a limited analysis was done to determine the bibliographic characteristics of the high versus low overlapped titles. A sample of 249 unique titles (0.3 percent of the unique titles) and a sample of 84 of

TABLE 4  
COMPARISON BETWEEN DOCTORAL AND NONDOCTORAL UNIVERSITIES

	Titles	Percent
Titles held by doctoral Universities and by nondoctoral Universities (overlap)	31,170	11.63
Titles held by either doctoral Universities or by nondoctoral Universities (unique to either group)	236,809	88.37



TABLE 5A  
COMPARISON BETWEEN DOCTORAL UNIVERSITIES

Titles Held	All Titles Cataloged		Current Imprints	
	Titles	Percent	Titles	Percent
By both UW-Madison and UW-Milwaukee	16,788	10.85	15,933	17.41
By only one doctoral university	137,922	89.15	75,569	83.59
Total	154,710	100.00	91,502	100.00

TABLE 5B  
COMPARISON AMONG NINE NONDOCTORAL UNIVERSITIES

Titles Held	All Titles Cataloged			Current Imprints		Cumulative Percent
	Titles	Percent	Cumulative Percent	Titles	Percent	
By one univ.	119,463	82.71		39,071	65.15	
By two univ.	15,335	10.62	93.33	11,588	19.32	84.47
By three univ.	5,413	3.75	97.08	5,127	8.55	93.02
By four univ.	2,413	1.67	98.75	2,381	3.97	96.99
By five univ.	1,118	0.77	99.52	1,110	1.85	98.84
By six or more univ.	697	0.48	100.00	694	1.16	100.00
Total	144,439			59,971		

TABLE 6  
COMPARISON AMONG ALL UNIVERSITIES IN FOUR DISCIPLINE AREAS

Discipline Area	Titles	Percent	Cumulative Percent
<i>History (D, E and F) Titles Held</i>			
In one univ.	22,986	82.92	
In two univ.	2,567	9.26	92.18
In three univ.	890	3.21	95.39
In four univ.	559	2.02	97.41
In five univ.	353	1.27	98.68
In six or more univ.	365	1.32	100.00
Total	27,720		
<i>Social Science (H) Titles Held</i>			
In one univ.	39,088	80.11	
In two univ.	5,437	11.14	91.25
In three univ.	1,871	3.83	95.08
In four univ.	1,030	2.11	97.19
In five univ.	661	1.35	98.54
In six or more univ.	706	1.45	99.99
Total	48,793		
<i>Science (Q) Titles Held</i>			
In one univ.	14,210	76.93	
In two univ.	2,513	13.61	90.54
In three univ.	931	5.04	95.58
In four univ.	439	2.38	97.96
In five univ.	188	1.02	98.98
In six or more univ.	190	1.03	100.01
Total	18,471		
<i>General Literature (PN) Titles Held</i>			
In one univ.	3,725	75.87	
In two univ.	614	12.51	88.38
In three univ.	245	4.99	93.37
In four univ.	160	3.26	96.63
In five univ.	73	1.49	98.12
In six or more univ.	93	1.89	100.01
Total	4,910		

the highly overlapped titles (3.0 percent of the current imprints held by six or more libraries) was drawn for the comparison across all institutions. Full OCLC bibliographic records, not locally edited versions, were examined for each title.

Each of these records was analyzed by seven factors: (1) format of the material, (2) language of publication or performance, (3) subject as determined by LC call number, (4) type of material content, (5) publisher, (6) series, and (7) source of original cataloging.

For language, publisher, and source of cataloging there were major differences between the high and low overlap groups. The high overlap titles were all written in English, 40 percent of the high overlap titles were published by university presses, and all but one of the high overlap titles was originally cataloged by the Library of Congress.

The uniquely held items included 22 percent written in foreign languages. University press publications accounted for only 7 percent of the unique titles. The source of cataloging for the unique items was much more varied than for the high overlap group. Twenty-four percent, or 61 titles, was originally cataloged by an OCLC member library. Twenty-seven of these titles were originally cataloged by the UW System library holding the item. These 27 titles were primarily local materials, e.g., theses, state and local documents, and locally published or produced audiovisual materials and monographs.

There were no large differences in the subject area of the materials in the high and low overlapped titles. Both groups had a large number of titles in the areas of social science and general literature. Of the high overlap titles, 20 percent were in the social sciences and 13 percent in literature. This order was reversed for the unique titles with 16 percent in literature and 14 percent in the social sciences. Philosophy/psychology/religion was the third largest subject area with 11 percent of the high overlap titles. All other subjects had 8 percent or less of the titles for both samples.

Table 7 details series and type of contents. No differences were readily apparent. Government documents and biographies were the most common types of contents.

It is difficult to assess the effect of material

TABLE 7  
BREAKDOWN BY SERIES AND TYPE OF CONTENTS  
FOR HIGH OVERLAP AND UNIQUE TITLES

	Percent of High Overlap Titles	Percent of Unique Titles
Series statement present	22.62	35.34
Type of contents		
Government publications	0	13.25
Textbooks	1.19	2.41
Addresses, essays, lectures	9.52	4.42
Conference publications	4.76	3.21
Biography	11.90	4.42
Fiction	0	5.62
Dictionaries	1.19	0
Juvenile	0	1.61
Bibliographies	3.57	2.01
Indexes	1.19	0

format on overlap. The high overlap titles were all printed items. Three percent of the unique titles were nonprint materials. Since academic libraries do not acquire audiovisual materials in great numbers, they are more likely to be unique titles. The UW-Stout, which acquires a large amount of nonprint material in applied technologies, had the second highest percent of unique materials.

#### SUMMARY

This analysis of title overlap placed the levels of duplication among all eleven universities at a lower level than previously assumed. The actual rate of duplication falls between 18 and 32 percent for the entire UW System.

These overlap rates were determined by listing all titles studied and counting the actual number of titles with two or more locations. These findings validate the findings of the SUNY study, but differ substantially from many of the overlap studies cited earlier. A close reading of those studies show that, in some cases, the overlap figures given are actually an average of the individual overlaps in several libraries and not a comprehensive count of overlapped titles.

There were no clear trends in any of the four basic academic subject areas. However, the larger libraries and those smaller libraries with special subject emphasis seem to be collecting material that is highly unique. A cooperative acquisitions program built on existing subject emphasis should result in larger collections of unique materials.

The highly overlapped titles do not appear to be a core of needed reference materials. The materials most likely to be frequently duplicated are English language materials published by university presses. These materials are standard items that seem to be routinely cataloged by the Library of Congress. The purchase of these materials by six or more of the UW libraries may be an indication of both the pertinence of the material published by university presses and the reliance on these publishers by book selectors. University press titles are prime candidates for inclusion in a systematic cooperative acquisition program.

Although the overlap found in this study was smaller than anticipated, the numbers of titles duplicated was still substantial. The 10.77 percent of all titles cataloged that were held in two separate locations represented 57,726 separate purchases of 28,863 titles.

The 1.06 percent held by five UW libraries represented 14,165 purchases of 2,833 titles.

Further analysis of the titles that were duplicated would be helpful in developing cooperative acquisition policies. A more detailed study of the subject areas represented by high and low overlap titles, extending beyond the basic disciplines, might reveal current trends in purchasing that could be used to serve as a basis for focusing collection-development responsibilities among the UW libraries.

Additional study of existing collections, as well as material currently added to the collections, is needed to identify the core of material that should be present in each library. Identifying some level of desirable or required duplication will clarify those collection areas in which duplication can be substantially reduced.

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GARY A. GOLDEN, SUSAN U. GOLDEN,  
AND REBECCA T. LENZINI

## Patron Approaches to Serials: A User Study

*Although many catalog use studies have been reported, those limited to patron success with locating serials have been uncommon. This study, conducted at a separate serial card catalog in a major research library, measures the success of more than four hundred patrons in the bibliographic retrieval of serials. The authors interviewed patrons and then analyzed the data in an attempt to determine how patrons approach a card catalog when searching for serials, their success rate, and reasons for their successes and failures.*

**B**IBLIOGRAPHIC CONTROL of serials, whether manual or automated, has long plagued librarians, and evaluation of user success with this control is seldom, if ever, undertaken. While many studies have been reported on patron usage of card catalogs, none of the published user studies has been limited to patron access to serials within a card catalog. Studies involving serials have focused predominantly on usage of actual items and titles, with an emphasis on collection development and control, rather than on bibliographic retrieval of those serial titles.<sup>1</sup> One study conducted by Peterson did investigate patterns of serial usage according to type of patron and type of citation; however, he did not query specifically the success with which a patron located any serial bibliographically.<sup>2</sup> The recent Murfin study on periodical retrievability focused primarily on locating a volume on the shelf, but did summarize user success with the "periodical directory." Murfin found that "only 50 percent of those who used the directory were able to use it correctly."<sup>3</sup>

One explanation for the small number of usage studies limited to serials may be the wide variance in the handling of serial files. Computer-produced serial lists in printout,

microfilm, or book format are not uncommon, nor are cardex title entry files or internal files of one sort or another serviced by library personnel. A separate serial card catalog that is accessible to the public and includes main entries, added entries, cross-references, and holdings invites a study of its users, their approaches to serials, and their successes and failures in finding them. This study was conducted at such a catalog, located at the University of Illinois, Urbana campus, where nearly 100,000 serial titles are included in the serial catalog.

During an age of rapid automation one may question the usefulness of another card catalog study, even a study limited to a previously unexplored area. However, we cannot hope to develop successful interactive online catalogs without a thorough understanding of the usage made of our present manual files. In her article "The Performance of Card Catalogs: A Review of Research," Hafter summarized current thinking by saying, "There appears to be a feeling that on-line systems can and should be designed by analyzing patron behavior at the card catalog."<sup>4</sup> Those developing online catalogs must know the major access points needed to ensure the highest probability of user success. It is doubtful that any online catalog will have the necessary access points to ensure 100 percent user success. Trade-offs will undoubtedly come because of costs of central memory core. Important access points may not be included due to lack of awareness on the part of

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Gary A. Golden is documents librarian; Susan U. Golden is automated records maintenance coordinator; and Rebecca T. Lenzini is assistant automated records librarian, all at University Library, University of Illinois, Urbana-Champaign.



the librarian. In fact, we may well discover that the most important access points have not been included in our traditional card catalogs and need to be uncovered for inclusion in future catalogs, whatever their form.

The research reported here is a first attempt at an exploratory study to determine how patrons who are looking specifically for serial publications approach a card catalog. Successful serial searches were analyzed to determine what factors contributed to the patrons' success, while failures were analyzed to determine what, if anything, could be done to improve the probability of success. The problems of frequent name changes, form of catalog entry versus the patron's bibliographic citation, and the use of cross-references were explored to judge their relevance to serial bibliographic retrievability, as was the impact of user instruction. The probable influence of AACR2 and increased title entry of serials was also investigated.

#### METHODOLOGY

The methodology selected for any user study has a profound effect on the data generated. As Hafter observed, "Almost all of the catalog use surveys are flawed by inadequate sampling procedures."<sup>5</sup> Lancaster devoted an entire chapter to "Studies of Catalog Use" in *The Measurement and Evaluation of Library Services* and notes that "the most valuable studies of catalog use have been conducted through interviews with users at the time they search the catalog" rather than by survey afterward.<sup>6</sup> The problems of constructing and administering the interviews are well covered by Hafter.<sup>7</sup>

With the interview approach in mind, a questionnaire was designed and pretested on thirty library patrons. Discussion between the researchers and with the University of Illinois Survey Research Laboratory led to the questionnaire employed in this study (see appendix 1). The testing instrument was designed to be straightforward, unambiguous, and easily coded. Days and times for the administration of the questionnaire were selected randomly between March and May of 1980, a period including both heavy and light use. A minimum of four hours were selected randomly for each test day and the questionnaire was administered over the total hour selected. A total of twenty-five weekdays and

ten weekend days using the hours between 9 a.m. and 11:59 p.m. produced a sample size of 452 of which 445 were usable (see table 1 for the composition of the sample).

During the designated testing hour, patrons who approached the serial card catalog and pulled out a drawer to begin a search were asked to participate in the study. Only eighteen people elected not to answer the questions, a high rate of success no doubt due to the unique cooperativeness of a college campus. Patrons not employing the serial card catalog in an attempt to locate serial publications were not interviewed. Each participant was questioned and the appropriate answers were circled by the interviewer. The average interview time was approximately five or six minutes.

Any interviewer must guard against biasing the sample in the selection of subjects for interview. Friendly faces or slower users are more likely to be selected for interviewing if no control mechanism is employed. To ensure random selection of subjects within any given hour, interviewers approached the first person to pull out a drawer after the start of the hour. Upon completion of that interview, the next patron to approach the file and pull out a drawer was questioned. Thus, users already in place at the start of an hour were discounted, as were patrons who approached the file while an interview was in progress. Unbiased selection of candidates was ensured. Anywhere from two to nine interviews were conducted during the hour. Each patron was observed until the conclusion of the serial card catalog search. For example, if patrons were referred elsewhere in the serial card catalog, the interviewer noted this and observed the second or even third search.

By its nature, any obtrusive study lends itself to some interviewer bias. By only approaching a patron after he/she had already selected the drawer (and had therefore for-

TABLE 1  
CHARACTERISTICS OF THE SAMPLE

	Number	Percent
Freshmen/sophomores	109	25
Juniors/seniors	121	27
Graduate students	153	34
Faculty/staff	39	9
Other*	23	5
Total	445	100

\*Includes visitors and students from other schools.

mulated an initial search strategy), the interviewer did not influence this initial search strategy. Also, no guidance on where to look next, what entry to use next, or how to correct spelling errors was given the patron until the questionnaire was completed. These attempts to limit interviewer intrusion helped to minimize the adverse effect of being observed on the user's performance.

#### RESULTS AND ANALYSIS

The strategy used by patrons when searching a card catalog for serial publications and their success or failure in finding those publications within a catalog will be developed using inferential and descriptive statistics. Success is defined in terms of bibliographic success, that is, the patron locating the entry in the catalog for the item he/she wanted. If the catalog contained the entry the patron desired but not the specific issue of that publication, this was counted as a successful search since the failure was the fault of the library's collection and not the user's ability to employ the catalog. Patron failure was defined as the inability to find an entry in the catalog to match the citation in hand. Failures were analyzed to discover sources of problems and their possible solutions. No attempts were made to determine if the patron actually retrieved the item after using the catalog or if that item was actually on the shelf in the library.

The serial card catalog was employed by patrons to locate what the researchers defined as four types of serials: journals and magazines, proceedings, annual reports, and government documents (see table 2).

English was the predominant language of the publications sought, with only twenty-seven of the serials searched (6 percent) written in other languages. Except for three annual reports and two proceedings, all the foreign language publications were for journals or magazines.

TABLE 2  
TYPE OF SERIAL SEARCHED

	Number	Percent
Journal or magazine	374	84
Proceeding	19	4
Annual Report	23	5
Government document	29	7
Total	445	100

Corresponding to the high number of journals and magazines searched, 43 percent of the sample stated that they had used an index, abstract, or bibliography to obtain their citation (see table 3). Forty-three different indexes and abstracts were used. The *Readers' Guide* was the citation source for fifty-four magazines (28 percent of the magazines searched), while the *Business Periodicals Index* was a distant second citation source for only seventeen magazines (9 percent). Bibliographies and footnotes in both journals and books accounted for 29 percent (or 127 citations). Forty graduate students and faculty members had citations that were generated via computer-assisted literature search of some database. This nearly equaled the forty-two (mostly undergraduate) students who had used a class reading list for their citations.

The diversity in the sources of patron citations did not seem to influence the overall success rate. Over 83 percent of the searches were successful in matching a bibliographic entry to a catalog entry (see table 4). Approximately 72 percent of those successful searches found the cataloging entry for the item sought in the first drawer selected from the serial catalog. Thirty-six patrons who were unsuccessful using the first drawer they selected persisted in conducting a second, third, and in one case, a fourth search. In most of these self-directed multiple catalog searches, the patron had made a mistake in the initial drawer selection because he was unaware of the drawer's alphabetical limitations (e.g., he wanted *New York* while the drawer chosen covered *New to New T*). Other multiple searches were necessary due

TABLE 3  
SOURCE OF CITATION

	Number	Percent
Class reading list	42	9
Index, abstract, or bibliography	192	43
Bibliography in book	36	8
Bibliography in journal	30	7
Footnote in book	30	7
Footnote in journal	31	7
Online literature search	40	9
Other*	20	4
Blank†	24	5
Total	445	100

\*Includes recommendations by friends or teachers and looking items up for other people.

†Includes those who did not remember or were not sure.

TABLE 4  
SUCCESS RATE AND CATALOG ACCESS POINTS

	Number	Percent	Title	Corp. Author
User entry same as catalog's entry	319	72	298	21
User conducted a second search	25	6	5	20
User conducted a third search	10	2	4	6
User conducted a fourth search	1	.2	0	1
Catalog had a cross-reference from the user's first entry	7	2	3	4
Catalog had a cross-reference from the user's second entry	4	1	3	2
Total	366	83	313	54

to spelling errors by the patron or because the patron was not sure of the form of the entry in the catalog. The cross-reference system in the catalog was not an important factor as only eleven patrons (3 percent of the sample) encountered a cross-reference. Those cross-references employed were from an abbreviation to a complete entry in the catalog (nine cases) or because of a name change (two cases).

Table 4 also shows that most of the patrons who were successful used a title entry. There were 303 successful title searches versus only fifty-eight successful searches by corporate entry. Twenty-four of twenty-seven patrons who conducted second or third searches had initially searched by a title that did not warrant a title-added entry under rules prior to AACR2 (i.e., proceedings or annual report of a corporate body). These patrons were forced to look under corporate entries. AACR2, with its emphasis on title entry, would have allowed twenty searches to be successful without the need for a second or third search.

Sixty-three of the successful searchers came to the catalog with only an abbreviated form of the entry. Most of the abbreviations were of the type one might find in an index or abstract (e.g., *Rev Soc Stud* for *The Review of Social Studies*), but some patrons employed a type of mnemonic memory device of their own creation (e.g., *PSQ* for *Political Science Quarterly* or *USN* for *U.S. News and World Report*). The use of an abbreviated entry and the subsequent transposition to a complete cataloging entry was employed by all groups of serial catalog users. The actual incidence of associating abbreviated entries with complete cataloging entries is probably much higher as there was no way of ascertaining the use of this phenomenon by patrons who did not have a written citation (25 percent of

the sample). If this phenomenon is proven to exist on a very large scale, future interactive online catalogs might choose to incorporate these abbreviations into their searching strategy, or perhaps offer a method of mapping the user's abbreviation to the correct entry.

Eighty-three percent of the searches studied were successful. Numerous factors contribute to the success of any one search in a card catalog. In an attempt to isolate some of those factors in this study, four general hypotheses were tested using the chi-square statistic calculated via *The Statistical Package for the Social Sciences*.

It could be hypothesized that a patron who frequently uses a catalog might be more efficient than a patron who uses it infrequently. A frequent user should be more accustomed to filing quirks and the general makeup of that catalog. Table 5 shows the relationship between the amount of serial catalog usage and whether or not a search was successful. The chi-square test shows that the success rate of the frequent catalog user was not significantly different (sig. = .10) than the success rate of the infrequent catalog user in this study. By itself, the number of times a patron used the serial catalog was not a determinant of whether the search would be successful.

Another factor that might influence the success of any catalog search is whether or not the patron has written down the citation. A

TABLE 5  
USE AND CATALOG SUCCESS

	Entry Found	Entry Not Found	Total
Frequent*	167 (46%)	31 (48%)	198
Seldom†	199 (54%)	33 (52%)	232
Total	366	64	430

$\chi^2 = .01$   $df = 1$  sig. = .10

\*Frequent includes daily or once/twice a week usage.

†Seldom includes none, once, or monthly usage.

written citation precludes an incorrect entry due to forgotten or transposed words and allows the patron to concentrate on understanding the arrangement of the catalog and matching the catalog entry. The hypothesis to be tested is that the patron who has written down a citation will be more likely to conduct a successful search than the patron who has not. Inspection of table 6 shows that there was no relationship between whether a citation was written (significant at .99 level) and the success of a search.

When a patron asks a librarian or some other library staff member if the library owns a specific serial, he/she is sometimes referred to the catalog to check under a specified entry. At Illinois, the referral might also have been from the main card catalog to the serial card catalog. Patrons who had been referred might have been expected to come to a catalog with a more correct or complete entry (i.e., they are told what to look under), thereby improving their chances for success. Table 7 shows the relationship between a patron who has been referred to the catalog and the success of his search. The chi-square test shows that the success rate for those who were referred was not significantly different (sig. = .65) than the success rate for those patrons not referred.

Librarians, instructors, and one's own friends all might attempt to provide instruction in how to use a card catalog. This instruction might range from a formal class discussion to a librarian offering hands-on instruction at the file. It might be hypothesized that students who have had any type of instruction in how to use the serial catalog would be more successful than students who have not had any type of instruction. Table 8 shows that there was some relationship between instruction (sig. = .07), but it was very weak (phi = .09).

Four factors were tested to see if any one

TABLE 6  
WRITTEN CITATIONS AND SUCCESS RATES

	Entry Found	Entry Not Found	Total
Citation written	246 (70 %)	52 (69 %)	298
Citation Xeroxed	13 (4 %)	3 (4 %)	16
Citation not written	93 (26 %)	20 (27 %)	113
Total	352	75	427

$$\chi^2 = .0196 \quad df = 2 \quad \text{sig.} = .99$$

Note that one cell equals 3.

TABLE 7  
SUCCESS AND REFERRAL TO SERIAL RECORD

	Entry Found	Entry Not Found	Total
Referred	142 (40 %)	33 (43 %)	175
Not referred	214 (60 %)	43 (57 %)	257
Total	256	76	432

$$\chi^2 = .1944 \quad df = 1 \quad \text{sig.} = .65$$

TABLE 8  
INSTRUCTION AND STUDENT'S CATALOG SUCCESS

	Entry Found	Entry Not Found	Total
Had instruction	104 (32 %)	14 (21 %)	118
No instruction	213 (68 %)	53 (79 %)	266
Total	317	67	384

$$\chi^2 = 3.148 \quad df = 1 \quad \text{sig.} = .07 \quad \text{phi} = .09$$

significantly influenced the success of a given search in the serial card catalog: (1) frequency of serial catalog use, (2) written citations, (3) referral to the serial catalog, and (4) previous serial catalog instruction. None of these factors alone were significant indicators of whether a search would be successful. However, due to the interrelationships of all four factors, it is possible, for example, that a person with previous instruction was also referred to the serial catalog, and due to a confounding effect, one factor influenced the other. It is also possible that the presence of instruction or referral or previous usage varied greatly from one patron to the next. However, through the use of partial correlation analysis, one is able to see the effect of one of these factors on the independent variable success, assuming other things are equal.

Table 9 is a matrix of partial correlations. Squaring the partial correlations (figure in parentheses) gives the proportions of the variance in successful searches that can be explained by each of the dependent factors. Instruction and frequency of use accounted for the most variance, 23 and 16 percent, respectively, while a written citation and referral to the catalog accounted for only 3 and 9 percent, respectively. Although no one factor significantly influenced the probable success of a search, all these factors together accounted for approximately 50 percent of the variance in successful searches.

#### FAILED CATALOG SEARCHES

Successful catalog searches and the factors



TABLE 9  
PARTIAL CORRELATIONS

	Successful Search	Frequency of Serial Record Use	Written Citation	Referred	Previous Instruction
Successful search	1.00	.47 (22%)	.19 (3%)	.31 (9%)	.41 (16%)
Frequency of serial record use	.37	1.00			
Written citation	.17		1.00		
Referred	.31			1.00	
Previous instruction	.39				1.00

contributing to them present only a partial analysis of card catalog usage. The reasons for unsuccessful searches need to be explored. Three causes for an unsuccessful catalog search are (1) collection failure, where the library does not own the publication and no entry could be expected to be found in the catalog; (2) catalog failure, where the material being sought is in fact owned by the library, but the catalog fails to inform the patron of this fact; and (3) user failure, where the patron has an entry that is in the catalog in the proper place, but the patron has failed to find it. An analysis of the latter two types of failures offers a true diagnostic evaluation of a catalog and is needed to improve our future catalogs.

Table 10 shows the number of unsuccessful searches and the three reasons for failure. An unsuccessful search was one in which the user failed to match a citation to an entry in the serial catalog. The twenty-four serials not owned by the library were checked in *New Serials Titles*, *Ulrich's International Periodicals Directory*, and other reference tools to determine if the patron was seeking material that in fact existed in print. Twenty titles were verified as correct in spelling and existing in print. Four titles could not be found to exist in print in the form of the citation the patron presented at the serial catalog. Since libraries do not own everything in print,

there will always be collection failures, but the relatively small level at Illinois is indicative of the size of the collection.

The thirty-nine serials that were in the serial catalog but were not found represented either a user or catalog failure. As table 11 demonstrates, 49 percent of the failed searches were because of user failures. The primary type of patron failure recorded was caused by the patron failing to locate a citation that had in fact an exact match in the serial catalog. Nineteen undergraduate students and graduate students fell into this category. Because of the very small sample size of user failures, no detailed statistical analysis could be reasonably attempted. However, one possible contributing factor to these failed searches might have been the user's inexperience with the catalog. Sixteen of these twenty-two patrons stated that they had never before consulted the serial catalog. Patron carelessness and nervousness caused by being observed might also have contributed to user failure.

The second type of failure was caused by incomplete entry and accounted for only 9 percent of the searching failures. One typical example of these failures was *American Hospital Statistics* instead of *Hospital Statistics*. The users committing this type of failure did so because of a "sloppy citation," one in which they did not write down the complete entry. Interestingly, all five of these patrons had written down the sources of their cita-

TABLE 10  
UNSUCCESSFUL SERIAL RECORD SEARCHES

	Number	Percent*
Not owned by library	24	5
In serial record, but not found	39	7
In main card catalog, but not in serial record	16	6
Total	79	18

\*Figures are rounded off.

TABLE 11  
PATRON AND CATALOG FAILURES

	Number	Percent of Failed Searches*
Patron missed entry	22	40
Patron had incomplete entry	5	9
Serial record failures	28	51

\*Does not include collection failure.

tions and could have gone back to those sources to correct their citation.

Errors in the serial catalog accounted for 51 percent (or eighteen) of the unsuccessful searches. Two reasons for this type of failure were misfiled cards (two cases) in the serial catalog, and serials that had a card in the main card catalog, but not in the serial catalog (sixteen cases). Because of the number of different filers in the serial catalog and the inclusion of different filing rules at different stages of the serial catalog development, mistakes due to filing error are inevitable. The sixteen serials found in the main card catalog but not found in the serial catalog were caused by local problems associated with the creation of the serial card catalog. Disturbingly, only four of the sixteen patrons indicated to the interviewer that they would check the main card catalog after their serial catalog search failed. Multiplicity of catalog files within a library and the failure of linkage from one to another directly caused twelve failures in locating a serial publication owned by the library.

#### CONCLUSION

The patrons sampled were successful in 84 percent of their searches. Almost 72 percent of these successful searches had no difficulty using a traditional card catalog as they matched their bibliographic citation to the correct catalog entry in the first drawer selected. Patron persistence by conducting second and third catalog searches resulted in the remaining 12 percent of the successful searches. This finding substantiates Hafter's conclusion that "users have a very high success rate at the catalog."<sup>8</sup> Implementation of title access to serials under AACR2 would mean that twenty out of forty-seven second and third searches (43 percent) would have been unnecessary.

An interesting phenomenon was employed in 17 percent of the successful searches. In these searches, sixty-three patrons ap-

proached the serial catalog with only an abbreviated form of the entry they were searching and were still able to conduct a successful search. Since online catalogs have the potential for access via an abbreviation or keyword, more study of this phenomenon is necessary, including how these abbreviations are derived and used.

In an attempt to determine the causes for our high success rate, four factors were isolated and tested. Frequency of serial catalog usage, written citations, referral to the serial catalog from another source, and previous instruction were by themselves not significant indicators of whether an individual search would be successful. However, as a group these factors accounted for almost 50 percent of the variance in a successful search.

There are several questions that the study did not answer. For instance, was the high success rate of the sample due to the high number of journals and magazines sought (as opposed to continuation-type entries)? Is the high rate of journal usage indicative of the type of serial searching done in most catalogs? Do card catalog users and users of present online catalogs search for serials in a manner consistent with our sample's searching patterns? These questions need to be addressed in future use studies to determine what factors contribute to patron success or failure in searching a catalog for a serial publication.

As is the case in many user studies, more questions were raised than answered by this research. With the current trend toward automated catalogs in many college and university libraries, the need to know the methods of searching our present catalogs for serial publications becomes imperative. The research reported here was the first step in understanding our present system. More studies are needed so that the catalog of the future will be responsive to as many patron demands as possible.

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## APPENDIX I: SPECIAL USER STUDY

Quest. #

Date

Time

Initials

1. What is your association with the university?
 

Freshman	1
Sophomore	2
Junior	3
Senior	4
Graduate student	5
Staff	6
Other	7
Faculty	8
Dept.	_____
2. What is your major field of study?  
(State) \_\_\_\_\_
3. Have you ever used this serial record before?
 

Yes (Go to Q.4)	1
No (Go to Q.7)	2
4. Approximately how many times do you use this serial record?
 

Daily	1
Once or twice a week	2
Once a month	3
Only once before	4
Other	5
5. Have you ever been shown how to use this serial record?
 

Yes (Go to Q.6)	1
No (Go to Q.7)	2
6. Who gave you this explanation? (Circle all that pertain)
 

Librarian	1
Friend	2
Teacher	3
Other	4

7. Were you referred to the serial record from another source or catalog?
 

Yes (Go to Q.8)	1
No (Go to Q.9)	2
8. Were you referred from (Circle all that pertain)
 

Circulation desk	1
Reference room	2
Information desk	3
Undergraduate library	4
Main card catalog	5
Shelflist	6
Other	7
9. What are you looking for today? (Record citation exactly)
 

1	2	3	4
---	---	---	---
10. Language of item searched?
 

English	1
German	2
French	3
Russian	4
Spanish	5
Other	6
11. Was the citation in number 9 written down?
 

Yes	1
Xeroxed	2
No	3
12. Where did you get this citation?
 

Class reading list	.01
Index/Abstract	.02
Bibliography	.03
Bibliography in book	.04
Bibliography in journal article	.05
Footnote in book	.06
Footnote in journal article	.07
Online literature search	.08
Recommended by teacher	.09
or friend	.09
LCS	.10
Other	.11

13. What is the name of this source?
- Written.....1
  - Xeroxed.....2
  - Orally stated.....3
  - Don't remember.....4
14. Have you ever seen or used this material before today?
- Yes.....1
  - No.....2
15. How did the user look up item? (List approaches)
- Same as Number 9.....(xref?) 1
  - Other entries:.....(xref?) 2
  - .....(xref?) 3
  - .....(xref?) 4
16. Did you find what you were looking for?
- Yes (Go to Q.18).....1
  - No (Go to Q.17).....2
17. What will you do next? (Circle all that apply)
- Forget about item,
    - abandon search.....1
  - Contact interlibrary loan.....2
  - Ask someone for help.....3
  - Check LCS.....4
  - Nothing today,
    - come back again.....5
  - Try main card catalog.....6
  - Other.....7
18. What will you do with this information?
- Retrieve piece.....1
  - Check LCS.....2
  - Other.....3
19. Have you participated in this study before?
- Yes.....1
  - No.....2
  - Don't remember.....3
  - Think so.....4



# Learning Theory, Lecture, and Programmed Instruction Text: An Experiment in Bibliographic Instruction

*Freshmen at two midwestern institutions of higher education participated in a bibliographic instruction experiment. A three-element model was used that considered the interaction of library tools, styles or modes of instruction, and a theory of learning. Comparisons were made between lecture and programmed instruction text in the teaching of bibliographic indexes and basic catalog card information. The learning hierarchy of Robert M. Gagné was used for three levels of learning: factual, conceptual, and application or problem solving. Results indicate a superiority of programmed instruction at the factual and problem-solving levels and the necessity for further experimentation.*

SINCE ITS APPEARANCE as a topic of major concern, debates about bibliographic instruction have moved from considerations of simple implementation techniques and problems to a recognition that it is a complex process which requires a wide range of approaches.<sup>1</sup> In this transition, academic librarians have discovered the work on learning theory and have begun to apply it to library instruction.<sup>2</sup> Attention is also being devoted to the processes by which students can be taught, from the traditional lecture method to technologically sophisticated instruction. Many librarians have concluded that a combination of teaching tools and techniques is desirable in order to meet all educational goals.<sup>3</sup>

It has become apparent in the last few years that the bibliographic instruction process requires a combination of three elements: (1) selection of specific tools for instruction, (2) identification of the style or mode of learning intended, and (3) selection of the proper type of instruction.

Figure 1 represents a model of these elements. A selection of library tools, types of instruction, and types of learning is made that results in the convergence (darkened area) necessary for learning to take place.

The intent of the experiment described in this paper was to study the effects of the convergence, or intersection, of the three circles (figure 1) on the bibliographic instruction process.

## PLANNING FOR INSTRUCTION

The most elementary bibliographic tools to instruct freshmen were selected in order to eliminate any difficulty that might result from the use of more complicated tools. Those selected were the *Readers' Guide to Periodical Literature*, *Applied Science and Technology Index*, the *Social Sciences and Humanities* indexes, and catalog card information. The learning hierarchy proposed by Robert M. Gagné was used to determine the three types of learning necessary for the use of the bibliographic tools, i.e., factual, conceptual, and application or problem solving.<sup>4</sup> Table 1 shows examples of how these tools utilize the Gagné hierarchy.

Consideration of the results of the research

Thomas T. Surprenant is assistant professor, Graduate Library School, University of Rhode Island, Kingston.

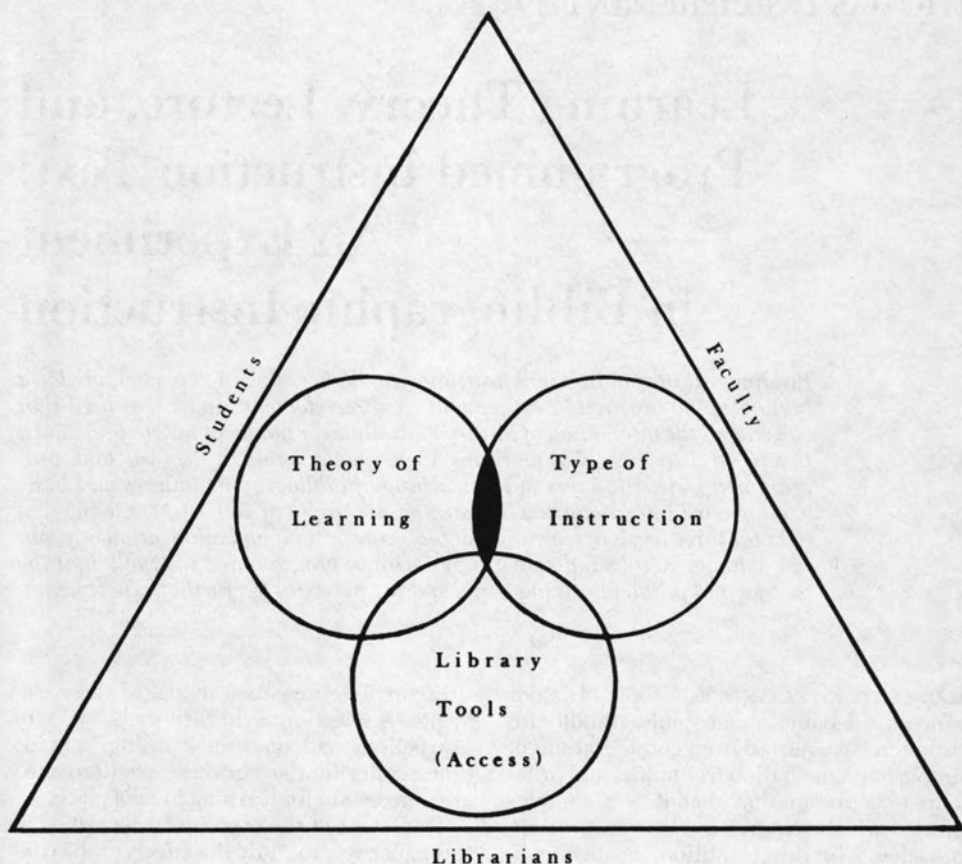


Fig. 1  
Bibliographic Instruction Model

by Allen, which compared the types of media to particular types of learning, pointed to the use of the traditional lecture method in a comparison with a programmed instruction text.<sup>5</sup> When all three elements, consisting of library tools, a theory of learning, and types of instruction, were considered, the specific model shown in figure 2 was the result.

In order to perform the experiment, a number of questions were formulated.

1. Would the overall test scores of those who were instructed by lecture and programmed instruction text differ significantly from the scores of those who received no instruction?

2. Would the overall test scores of those who were instructed by lecture differ from the scores of those who had received the pro-

grammed text instruction?

3. Would there be a significant difference between those who received the lecture and those who received the programmed instruction text at the factual, conceptual, and application levels of learning?

#### THE EXPERIMENT

The experiment utilized a research design that consisted of four groups, two instructional (or experimental) and two that received no instruction (or control).<sup>6</sup> Table 2 represents the experimental design.

The principles of instructional design, standard research practices, and the developmental model presented by Pipe were used in the design and validation of the lecture and programmed instruction text.<sup>7</sup> Behavioral

TABLE 1  
EXAMPLES OF MATCHUP BIBLIOGRAPHIC TOOLS  
AND LEVELS OF LEARNING

Level	Example
Factual	There are three types of catalog cards: author, title, subject. Periodical indexes are arranged primarily by subject.
Conceptual	Both periodical indexes and catalog cards are analogs of the collections, i.e., they represent ways of providing access to the collection.
Application	Demonstrated ability to locate and identify component parts of a bibliographic citation.

objectives for the students who would be learning how to use the bibliographic indexes and basic catalog card information were formulated, and a text that would measure knowledge before instruction and at the completion of instruction was prepared.

The writing of the programmed instruction text was accomplished in three stages. First, portions of the text were written, and a group of six freshmen commented in both written and oral forms on each section. From

TABLE 2  
EXPERIMENTAL DESIGN  
SOLOMON FOUR

	Pretest	Instruction	Posttest
I (R)	O <sub>1</sub>	x	O <sub>2</sub>
II (R)	O <sub>3</sub>		O <sub>4</sub>
III (R)		x	O <sub>5</sub>
IV (R)			O <sub>6</sub>

(R) = random assignment

O<sub>1</sub> - O<sub>6</sub> = test or measurement

x = instruction

Groups I and III are instructional groups and groups II and IV receive no instruction.

their comments, revisions were made and a rough draft of the entire text was completed. The rough draft was circulated to ten academic librarians and the six students for comments and criticism. A further revision was made and the text was circulated a final time.

The lecture was drawn from the programmed instruction text and included a set of fourteen transparencies to provide the same examples as those given in the text. The lecture was designed to be a duplicate of the text without the practice questions.

A pretest of all of the materials was run at

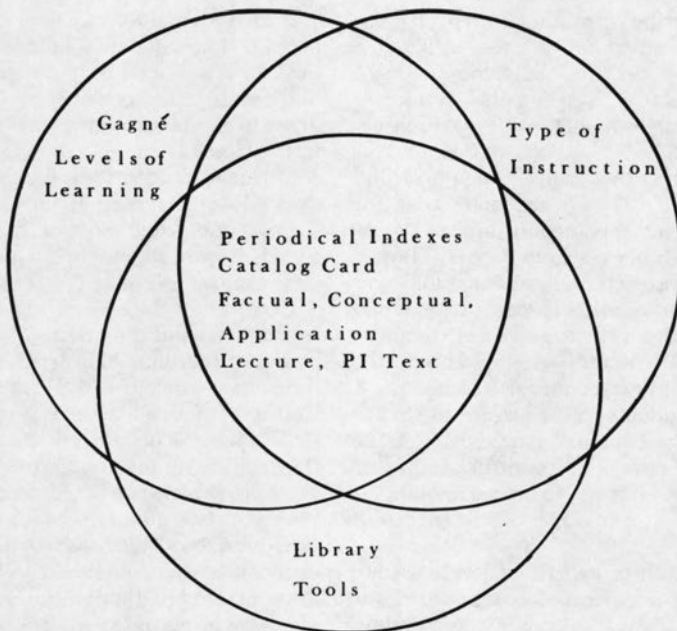


Fig. 2  
A Specific Bibliographic Instruction Model

the College of St. Scholastica, Duluth, Minnesota, in early December of 1977. A total of eighty-five students participated in the validation test, with seventy-nine usable responses. On average, the test took twenty-five minutes. An evaluation of the procedures used determined that they were adequate for the study. Test scores were checked for internal consistency using KR20, a statistical test measuring consistency for two alternative test items. The KR20 statistic was .92 for the tests, indicating a high degree of internal consistency. Given the high reliability, no further revisions were made.

Freshmen from Michigan Technological University (MTU) and the University of Minnesota, Duluth (UMD), participated in the experiment. MTU had forty-six sections of freshmen English courses with a limit of twenty-eight students per section. UMD had twenty-nine sections with a limit of twenty students per section. Thus, the total possible number of students participating in the experiment was 1,868. Since the students were already registered for the second-quarter classes, randomization was achieved on the basis of sections instead of individual students. An outside consultant employed standard mathematical procedures, utilizing a programmable electronic calculator random number generator to assign the sections to one of the four elements in the research design (see table 2).

The experiment was run during the second quarter of the 1977-78 academic year. At both institutions, it came just prior to the assignment of library research papers. Thus, it fit into the instructional sequence and was directly related to what students were doing at the time. From the total, 1,234 responses were useful. The unusable responses were the result of missing tests and/or instruction. A total of 629 students (327 in lecture and 302 in programmed instruction) participated in the instructional phase. The control group had 605 students who received no instruction.

#### RESULTS AND DISCUSSION

The results of the experiment were used to test the questions formulated prior to the study. For statistical purposes, the questions were phrased as hypotheses as follows:

*H1:* Experimental group posttest scores will be greater than control group scores.

*H2:* Posttest scores of lecture and programmed instruction will be equal.

*H3:* Factual posttest scores will be higher in programmed instruction than in lecture.

*H4:* Application posttest scores for lecture and programmed instruction will be equal.

*H5:* Conceptual posttest scores will be higher in lecture than in programmed instruction.

Standard checks confirmed the validity (internal and external) of the experiment.<sup>8</sup> A factor analysis of the test scores resulted in dropping *H5*, the conceptual level, from consideration. The factor analysis identified only one question in the pre- and posttest as conceptual. Thus, the reliability of a single test item could not be demonstrated by this hypothesis, and any conclusions were likely to be tenuous.

Prior to data analysis it was decided that any result with probability equal to or less than  $\alpha = .05$  would be considered significant. The results of the data collected are summarized in tables 3 and 4. Table 1 shows the pretest and posttest means and variances for each instructional method and for the control group.

From the results presented in table 3, it can be seen that students who received instruction, in either lecture or programmed text, did significantly better ( $\alpha < .01$ ) than students in the control group who received no instruction. Thus, the first hypothesis was confirmed. Students in the control group showed almost no gain in the period between the two tests while those in the experimental groups improved by at least thirteen points on average.

Comparing the lecture and programmed instruction conditions (table 3), students who used the programmed instruction text did significantly better ( $\alpha < .001$ ) than those in the lecture. On the average, programmed instruction students scored six points higher than lecture students on the posttest. Hypothesis two, which predicted no difference between the two groups, was not confirmed.

Table 4 shows the results of the comparison of mean posttest scores for lecture and programmed instruction on the factual and application levels of learning. From table 4, it can be seen that when the two modes of instruction are compared, programmed instruction is significantly better than lecture



TABLE 3  
PRETEST AND POSTTEST SCORES FOR EXPERIMENTAL AND CONTROL GROUPS

Modes of Instruction	Pretest	Posttest	Differences	n
Lecture	19.175* (54.989)†	30.056 (79.265)	10.9	327
Programmed instruction	20.585 (48.552)	36.759 (93.289)	16	302
Combined lecture and PI	19.88 (51.77)	33.408 (86.277)	13.5	(609)
No instruction (control group)	19.343	21.084	1.7**	605
Total				1234

\*mean score

†variance

\*\*non-significant

TABLE 4

MEANS AND VARIANCES: FACTUAL AND APPLICATION SCORES OF LECTURE AND PROGRAMMED INSTRUCTION

	Mode of Instruction		
	Lecture	Programmed Instruction	Total
Factual	7.997* (7.187)†	9.977 (8.986)	8.948 (9.018)
Application	20.09 (38.59)	23.99 (38.36)	21.96 (42.22)

\*mean score

†variance

for both factual ( $\alpha < .01$ ) and application ( $\alpha < .001$ ) levels of learning. On the factual level, programmed instruction scores are almost two points (1.98) higher than lecture. This difference confirmed the third hypothesis, which identified programmed instruction as superior. The application level shows a difference of almost four points (3.9) in favor of programmed instruction between the two modes of instruction. The fourth hypothesis predicted no significant difference at the application level of learning. This hypothesis was not confirmed.

The control group acted as a check on the validity of the entire process. Checks on the test scores, both before and after the experimental groups received instruction, provided evidence that neither the test itself nor any outside influences could account for the differences in scores.

The second hypothesis predicted that, overall, lecture and programmed instruction would be the same in the posttest scores. However, programmed instruction did significantly better than lecture. It must be pointed out that the lecture benefited from the development of the programmed text for this experiment. Thus, it could not be called a "typical" library lecture.

It should also be pointed out that the same librarian did not give the lecture in all cases: four different librarians participated. Thus, there was not full control because of the differences inherent in each personality and style of presentation. Partial control resulted from the structure of the materials and the time allotted to present them. With a programmed text the lack of uniformity inherent in the lecture was eliminated. Programmed instruction is consistent over time while it is almost impossible for lectures to be consistent, especially when librarians are frequently asked to give the same lecture three or more times in one day.

It is interesting to note, too, that programmed instruction has been considered particularly strong in the presentation of factual information. The results for the third hypothesis reaffirmed that programmed instruction did significantly better than lecture for this type of learning. Programmed instruction is uniquely suited for learning facts. It uses a question-answer format that is more germane to learning factual information than to any other type of learning. On the other hand, a lecture that is a mere recitation of facts is usually considered boring. The good lecturer knows this and tries to enliven the presentation. Thus, extraneous information is often introduced in an attempt to make the lecture more palatable. This can, and often does, disguise the factual information and complicates the entire learning process. Finally, with programmed instruction the answer to what has been presented is elicited almost immediately, while with lecture no answer is required at the time of instruction and the student must wait (often more than half a semester) for a test before there is any feedback.

The last hypothesis stated that there was no significant difference between lecture and programmed instruction at the application level of learning. The analysis determined that programmed instruction did significantly better than lecture. There is little doubt that programmed instruction provides practice in problem solving as part of its structure. Unless carefully planned, lectures frequently ignore practice for students. Those students who have the programmed text have ample opportunity to review and practice through the question-answer format. Application, or problem solving, is best taught with problem situations in which the learner is required to use what was previously learned in order to work out the correct answer. With more practice, the chances of success are greater. In this experiment, the programmed text exposed the student to practice situations while the lecture did not.

Finally, the author would like to point out, and in some cases emphasize, the advantages that programmed instruction texts have to offer in the bibliographic instruction process. (1) Time is saved once the text is developed and tested. (2) Information is presented in an orderly, uniform way, is consistent over time, and is designed to be self-pacing so that students can learn at their own speed. (3) Flexibility is present in that successful pre-testing of what is being learned allows the student to skip through known material to unfamiliar material. Practice is provided that is important in both the learning and retention of basic library skills. (4) The absence of extraneous information that frequently creeps into other forms of instruction makes it easier for students to identify what is important, although not necessarily as exciting, to learn. (5) The form of this mode of instruction makes it easy to assign, either during class time or as an out-of-class assignment. Thus, programmed instruction texts can be more acceptable to faculty—and less threatening. (6) It represents an alternative

to the labor-intensive instruction currently offered.

### CONCLUSIONS

In this study the programmed instruction text was shown to be a superior mode of instruction to lecture under the conditions stated. Librarians should seriously consider the merits of the programmed instruction text for any instruction that has a large factual component. The success of the programmed instruction text in the area of application or problem solving should encourage further experimentation in this area. Certainly more research is needed in order to strengthen the argument that a programmed instruction text can be used for instruction in problem solving. At least, the results in this area should remind librarians that sufficient practice should be built in, no matter what the mode of instruction. Without practice it is not likely that skill levels can be maintained.

The experiment also pointed to the use of statistical methods to check the validity of the entire instructional sequence. Without the benefit of a check, the conceptual level of learning would have been assumed to be valid. Its elimination after a routine validity check points to the importance of such procedures. It also illustrates human fallibility when identifying levels of learning and attempting to organize instruction utilizing them.

A great deal more experimental research is necessary to examine various ways of teaching students how to use particular library tools. Emphasis should be placed on the types of learning in relation to the modes of instruction. For large groups, lecture may not be as viable as alternative methods. What works at small colleges may not work as the number of students taught increases. In this day of decreased funding and short staffing, it is more necessary than ever to turn to other modes of teaching students how to use the library.

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LARRY HARDESTY, NICHOLAS P. LOVRICH, JR.,  
AND JAMES MANNON

## Library-Use Instruction: Assessment of the Long-Term Effects

*The recognition by librarians of the growing importance of evaluating library-use instruction is steadily increasing, as evidenced by reports in the literature. However, much work has yet to be done which uses sophisticated evaluation techniques. This paper reports the follow-up of an earlier study by examining the long-term retention of library-use skills. Through use of pretesting and posttesting, control and experimental groups, aggregate and individual comparisons, multiple regression, and other techniques, the authors concluded that long-term possession of library-use skills is more highly related to library-use instruction than to either inherent intellectual ability or academic diligence. In addition, the authors discuss the appropriateness of quantitative and qualitative methods of evaluation and caution against taking for granted the effective use of evaluation.*

THE OFTEN QUOTED remark about the weather, which is typically but erroneously attributed to Mark Twain,<sup>1</sup> can be applied to academic librarians involved in library-use instruction: that is, there is a good deal of talking about evaluation, but few seem to be doing anything about it. Richard Werking, in his excellent review and critique of the literature evaluating library-use instruction, found published evidence of only a handful of examples.<sup>2</sup> He did note, however, a growing number of articles pertaining to the evaluation of library-use instruction programs and techniques, including a previous article by the authors.<sup>3</sup> These articles play an important role in demonstrating to academic li-

brarians the various techniques that can be used in library program evaluation, and in adding to the developing body of knowledge concerning the effectiveness of library-use instruction.

The earlier article by the authors focused on two particular goals: (1) documenting the effects of library-use instruction on the short-term acquisition of library-use skills; and (2) demonstrating a methodology that could be used successfully in such an evaluation.<sup>4</sup> The authors found that a sample of DePauw University students exposed to library-use instruction programs in their freshman year tended to score higher—to a statistically significant degree—on a paper and pencil test developed by the authors to measure library utilization skills than did a comparable group of students not exposed to library-use instruction. In fact, as measured by the test, the short-term gains of the freshmen were comparable to the library-use skills of graduating seniors.

Werking, in citing a number of librarians associated with library-use instruction, reported that a common complaint about such tests is "the significance of such short-term gains is not likely to be great."<sup>5</sup> As Werking correctly observes, the question of long-term retention of skills is a very important educa-

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Larry Hardesty is head of the Reference Department, Roy O. West Library, DePauw University, Greencastle, Indiana. Nicholas P. Lovrich, Jr., is director, Division of Governmental Studies & Services, Washington State University, Pullman. James Mannon is assistant professor of sociology, DePauw University. The authors acknowledge the support of the Council on Library Resources and the National Endowment for the Humanities through their joint College Library Program grant to DePauw University for 1977-1982, a grant that made possible the library-use instruction program and the evaluation described here.



tional concern. In order to assess the question of long-term retention of library-use skills, the authors have conducted a follow-up of the earlier DePauw University study. The purpose of this article is both to report the results of this follow-up study and to explain the methodology employed so that other librarians may use it in conducting similar evaluations of library-use instruction programs.

#### SAMPLING GROUPS

The present study analyzes data on several samples of DePauw University students. For comparative purposes the authors included a base-line group of ninety-one DePauw University seniors in the 1977 graduating class who received no formal library-use instruction from a librarian while attending DePauw University. A second major sample group consists of 312 seniors in the 1980 graduating class who agreed to complete a questionnaire containing the library-use skills test reported in the earlier article. These 312 students represent a sampling return rate of 70 percent of the entire 1980 DePauw University graduating class, which was surveyed in the spring of 1980. The third sample group consists of a panel of 1980 seniors (eighty-two students) who received formal library-use instruction as freshmen in 1977 and whose scores were reported as part of the earlier study. They are a subset of the 312 seniors responding to the 1980 survey.

The availability of information gathered over approximately a three-year period makes the evaluation of the DePauw library-use instruction program interesting in a number of ways. At the most elemental level, the skill-possession scores of the 1980 seniors can be compared with those of their 1977 counterparts, the students who had no formal library-use instruction. Second, such data can be employed to address the question of whether the degree of exposure to formal library-use instruction is associated with the level of library-use skills. In this connection, it can be determined whether library-use skills are more closely related to library-use instruction than to other plausible predictors of skills possession such as basic intellectual capacity or academic diligence.

In addition to determining the relative degrees of association between skills possession

and academic background and instructional exposure among 1980 graduating seniors, multiple regression analysis can be utilized to determine how much variation in skill possession can be explained by each of the predictors while controlling the effects of the remaining determinants. Finally, the availability of panel data for more than eighty of the 1980 graduating seniors—data that include preinstructional, short-term postinstructional, and long-term postinstructional assessments of library-use skills—allows the direct testing of short-term and long-term library-use skills resulting from library-use instruction and the other predictors.

Because the central question of this evaluation pertains to the long-term effects of the library-use instruction, a brief explanation of the efficacy of a panel study is in order. A panel is a "special type of time-series technique; it measures some attributes of a given sample of people at several moments."<sup>6</sup> In other words, panel studies involve repeated observations of a sample of persons in order to assess changes over time. Panel studies are considered to have great statistical efficiency because individuals in the sample can be compared with themselves at various points in time, thereby reducing extraneous variability, and allowing for direct individual comparison. In short, panels are "useful for studying the effects of specifically introduced measures."<sup>7</sup> This method enabled the authors to select a sample of freshmen students in 1977, provide some of them with a series of library-use instruction sessions, and compare their scores on the skills test at three points in time—prior to the original instruction (1977), eight weeks after the instruction (1977), and as seniors in 1980.

#### QUANTITATIVE VERSUS QUALITATIVE EVALUATION

What follows is largely a quantitative analysis that utilizes statistical methods to investigate the subject of evaluation. Werking, in his 1980 article, is critical of such an approach for determining "proof" of effectiveness in the evaluation of library-use instruction.<sup>8</sup> Without denying the value of Werking's observations, the authors nevertheless believe they are justified on several sound grounds in using a quantitative ap-

proach. While *qualitative* evaluation is certainly legitimate in many evaluation contexts, *quantitative* evaluation is no less praiseworthy.

Quantitative evaluation has come under severe criticism, in part as an outgrowth of the results of the Westinghouse Learning Corporation's evaluation of the Head Start program.<sup>9</sup> Westinghouse's evaluators found, through using largely quantitative methods, that the effects of Head Start tended to fade when the children returned to poverty homes and ghetto schools, and this evaluation of a program—popular both in Congress and urban communities—met with sharp criticism, particularly with respect to the methodology used. The result has been that many educational-program evaluators now look to alternate methodologies, to techniques such as the qualitative assessments used in anthropology and sociology.<sup>10</sup> At least one observer has suggested that had the Westinghouse study found positive effects for Head Start, there would have been few questions raised about the adequacy of the quantitative methodology.<sup>11</sup>

No belittlement of the positive dimensions that qualitative methodology has brought to evaluation is intended; little is to be gained by a time-consuming and unproductive debate over qualitative versus quantitative methodology in the evaluation of library-use instruction. Reichardt and Cook, in their carefully reasoned examination of both methods, concluded that there was little reason to choose between them. They recommended that the researcher freely choose a mix of attributes from both types of methodological approaches so as to best fit the demands of the problems at hand.<sup>12</sup> In their view, the most telling and fundamental distinction between the two types of evaluative approaches lies along a continuum ranging from verification on one end to discovery on the other. According to Reichardt and Cook, quantitative methods have been developed most directly for the task of verifying or confirming established theories, while to a rather large extent qualitative methods have been developed primarily for the task of discovering or generating theories.<sup>13</sup>

As part of the overall evaluation of the library-use instruction program at DePauw University, both quantitative and qualitative

methods were used. Jerry Bakker, professor of chemistry at Earlham College and formerly the teaching-learning consultant at that school, well known for its library-use instruction program, conducted the qualitative part of the evaluation. The results of his evaluation, however useful, addressed primarily local concerns and are not included in any detail in this article.

For this public assessment of the impact of DePauw's library-use instruction program, quantitative analytical approach has a decided advantage. By employing statistics in the analysis of the effects of instruction and other factors upon library-use skills, we can communicate a good deal of information beyond our immediate setting. As Mueller has argued, "There is a continuity between common sense, which informally makes rough quantitative judgments, and statistics, which is not only a more formal and precise version of such knowledge, but also of more extended scope."<sup>14</sup> More specifically, while many in academic librarianship intuitively feel that library-use instruction is of considerable value in increasing library-use skills, quantitative measures can add precision and scope to such arguments. If one is particularly interested in sorting out the influence of other factors—such as student intellectual capacity, academic diligence or major field of study—statistical techniques can be indispensable in determining the direct effect of library-use instruction.

#### A THREE-YEAR ASSESSMENT

In an earlier report on the library-use instruction evaluation program at DePauw University, it was shown that an important amount of short-term gain in library-use skills was associated with that school's library-use instruction. In comparisons contrasting instructed freshmen with both senior students of the 1977 class and noninstructed freshmen (as a control group), those students who were exposed to library-use instruction showed evidence of the positive effects of that instruction.<sup>15</sup> Although these results were important to note and document, they represent only the first step in understanding the possible effects of library-use instruction. More important than the question of short-term gain in skills, of course, is the question of the *lasting effects* of instruction. Moreover, can

we associate higher levels of individual skills in library-use with higher degrees of exposure to library-use instruction? Similarly, over the long run, are factors other than library-use instruction better predictors of the acquisition of library-use skills? In order to investigate these and related questions, the data collected in the original study was supplemented with additional follow-up library-use skills information collected in a survey of the 1980 senior class at DePauw University.

Taken together, the survey data collected at two points in time in 1977 among freshmen and the senior class, and the data collected among the seniors of the 1980 class, provide the basis for two kinds of analyses of long-term skills-acquisition effects of library-use instruction. First, such data allow the comparison of *aggregate* levels of skills possession among various groups of interest (e.g., 1977 seniors versus 1980 seniors, those in the 1980 senior class who received library-use instruction versus those who did not, etc.). Secondly, the existence of three measures of library-use skills taken at three points in time for a substantial group of 1980 seniors—constituting a panel study—allows the verification of hypotheses suggested by aggregate patterns of comparison at the *individual* level of analysis.<sup>16</sup>

In the area of aggregate comparison, perhaps the most basic question is that of overall effects: that is, did the library-use instruction given to some students in the 1977 freshman class result in raising the overall level of library-use skills of that class? If library-use instruction given to 1977 freshmen did result in the improvement of the aggregate level of skill possession of students in that class, it should be possible to show that the skill levels of 1980 seniors (the 1977 freshmen) are superior to those of 1977 seniors. Table 1 reports the results of such a comparison.

Table 1 reveals findings that fall in the predicted pattern. While the relatively small number of 1977 seniors, the differential effects of selectivity in return rates in the 1977 and 1980 surveys of senior students, and the disproportionality of cases in the three major areas of study make the use of inferential statistics inappropriate, it is informative to note that the direction of differences observed coincides with predicted differences, and that the areas where most use is made of library

TABLE 1  
COMPARISON OF LIBRARY-USE SKILLS  
AMONG 1977 AND 1980 SENIORS

Major Area of Study	Mean Scores*	
	1977 Seniors	1980 Seniors
	X no.	X no.
Humanities	14.62 (29)	15.80 (74)
Social science	14.91 (47)	16.34 (92)
Natural science	15.03 (15)	15.08 (64)

\*Mean scores on identical, twenty-item skills test by major area of study.

resources—the humanities and social sciences—are precisely those where the greatest differences are observed.

Any such aggregate comparisons are subject, of course, to the criticism that factors *other than* library-use instruction account for the observed effects. Perhaps other campus-wide influences or national student trends intervened between 1977 and 1980 to cause the 1980 seniors of DePauw University to have higher library-use skills than their 1977 predecessors—irrespective of any contact with library-use instruction. Similarly, it is possible that the 1977 and 1980 senior classes differ with respect to intellectual capacity and/or academic diligence, hence any difference in library skills scores in the aggregate are the result of such background differences rather than selective exposure to library-use instruction. In order to determine whether exposure to library-use instruction has the predicted effect upon library-use skills, it is possible to analyze the findings of the 1980 senior survey to discover if (1) the degree of exposure to library-use instruction is directly associated with level of library-use skills possession; and (2) the association between library-use instruction and skills possession is stronger than that between skills possession and other relevant dimensions of difference among students—such as intellectual capacity (as measured by the verbal portion of the Scholastic Aptitude Test) and academic diligence (as determined by grade point average). Table 2 sets forth the findings of the 1980 senior survey with respect to these two dimensions of comparison.

The results reported in table 2 once more indicate the presence of a significant effect upon library-use skills of library-use instruction. The use of two measures of degree of exposure to library-use instruction to esti-

TABLE 2  
LIBRARY USE SKILLS, LIBRARY-USE INSTRUCTION, AND ACADEMIC BACKGROUND CHARACTERISTICS:  
A COMPARISON OF DEGREE OF ASSOCIATION AMONG 1980 SENIORS (GAMMA)\*

Measures of Exposure to Library-Use Instruction				Measures of Academic Background			
<i>Number of Courses Taken at Upper Division Level Where Library Instruction Was Given</i>				<i>Scholastic Aptitude Test – Verbal</i>			
Skill Test Score†	None	One	Two or More	Grade Point Average	≤ 440	450-530	≥ 540
Low	77	18	1	Low	32	33	21
Medium	33	26	7	Medium	28	15	17
High	18	32	18	High	11	16	32
gamma = .658				gamma = .279			
<i>Total Number of Courses in Which Library-Use Instruction Was Encountered (Freshman Year and Upper-Division Courses)</i>							
Skill Test Score	No. Courses	Freshman Only	Freshman and Upper-Division	Grade Point Average	≤ 2.7	2.8-3.2	≥ 3.3
Low	24	61	11	Low	44	27	24
Medium	4	33	29	Medium	25	26	15
High	6	17	45	High	13	22	31
gamma = .624				gamma = .310			

\*Gamma is an ordinal measure of statistical association measuring one-way association. It utilizes information about one variable to tell something about a second variable. The higher the gamma score the stronger the association between two variables. See Michael Malec, *Essential Statistics for Social Research* (Philadelphia: Lippincott, 1977), p.137-46.

†Scores on the skills tests have been trichotomized into low (15 or less), medium (16 or 17), and high (18 or more) categories.



mate the effects of differential experience with library-use instruction results in virtually identical findings with respect to the predicted effect of library-use instruction. Whether one considers the total number of courses taken in which library-use instruction was provided, or whether one focuses only upon upper division courses wherein special bibliographical instruction by a librarian was part of the course of instruction, it is clear that degree of exposure to instruction is positively associated with possession of library-use skills. When a comparison is made of the degree of association (the gamma coefficients) obtained between instruction and skill possession and the background characteristics (SAT verbal and GPA) and skill possession, it is clear that library-use instruction is much more highly correlated with skill possession than either inherent intellectual ability or academic diligence.

It is possible, of course, that the relationship between exposure to library-use instruction and these background factors is biasing the observed results; that is, it could be that the likelihood of taking additional course work in areas where library-use instruction is likely to occur is correlated with intellectual capacity and/or academic diligence, hence indicating a spuriously high association between library-use instruction and possession of library-use skills. In order to check against this possibility, it is necessary to employ multiple regression analysis, a statistical process wherein the simultaneous consideration of instructional exposure and background factors can be accomplished and results can be obtained that indicate the *relative importance* of each factor in the determination of variation in library-use skills possession.<sup>17</sup>

Table 3 reports the results of a multiple regression analysis that employs SAT verbal test scores, grade point average, number of upper division courses taken wherein library-use instruction occurred, and total number of library-use instruction courses experienced to predict library-use skill scores among 1980 seniors.

The results displayed in table 3 indicate clearly that experience with library-use instruction is the most important source of variation in library-use skills possession. In terms of relative effects, the two indicators of exposure to library-use instruction rank highest

TABLE 3  
RESULTS OF MULTIPLE REGRESSION ANALYSIS\*

Results†		
Multiple R	.623	
R Square	.389	
Standardized Regression Coefficients‡		
	Beta	Statistical Significance
Total number of courses	.367	.001
Number of upper-division courses	.262	.001
SAT verbal	.162	.05
GPA	.159	.05

\*Relative effects upon level of library-use skills for 1980 seniors produced by exposure to instruction and academic background.

†Dependent variable = Library-use skill score

‡Independent variables = SAT verb 1, GPA, number of upper-division courses wherein library-use instruction occurred, and total number of courses since freshman year wherein library-use instruction occurred.

§Relative predictive power of independent variables.

and next highest in the ordering of standardized regression coefficients (indicators of degree of impact upon the dependent variable of one predictor after the intervening contributory effects of all other predictors have been controlled) for the four variables entered into the regression analysis. SAT verbal scores and grade point average do not rival the effects of total number of courses taken in which library-use instruction is obtained as a predictor of level of library-use skills possession.

The analyses developed up to this point indicate very clearly the possibility that important effects are associated with library-use instruction. However, the possibility persists that an *ecological fallacy* may be associated with the exclusive use of aggregate data and collective comparisons. That is to say, the aggregate association between instruction and skills possession may not derive from individual effects.<sup>18</sup> In comparing various subgroups (e.g., highly exposed versus freshman-instructed only, high grade point average versus modest grades, etc.) to determine the degree of association with skills possession demonstrated by one or another factor, it is always possible that the groups being compared are dissimilar with respect to one or more important factors. One way to remedy this problem in the study of factors associated with change due to instructional effects is to study *the same persons* (as opposed to differ-

ent groups of persons) over time. This panel study technique is often employed to determine both the direction of effects due to instruction and to assess the absolute amount of change occurring where it is possible that students might both gain and lose skills or information at varying rates.

Not only does the use of a panel study technique allow one to check for the hidden effects of intervening factors, but it also allows the researcher to distinguish between short-term and long-term gains in skills or information. By taking measurements of skills possessed before instruction, shortly after the conclusion of instruction (eight weeks), and a considerable time after instruction (three years), it is possible to identify both short-term and long-term effects of instruction, and it is possible to determine what factors are associated with both short-term and long-term changes in skills possession levels. Table 4 reports the results of such an analysis. It includes a listing of measures of association (Pearson correlation coefficients) for the four major factors investigated above—two measures of exposure to library instruction, a measure of intellectual capacity, and a measure of academic diligence.

Table 4 adds further evidence to the argument that library-use instruction is an effective means of enhancing library-use skills. In the area of academic background factors it can be seen that there is a modest degree of association between both grade point average and SAT verbal test scores and short-term changes in library-use skills, but that neither

factor is associated with long-term library-use skill scores to a statistically significant degree. In contrast, long-term changes in library-use skills are highly associated with both measures of exposure to library-use instruction. These findings indicate that neither intellectual capacity per se nor diligence in the pursuit of good grades will produce a degree of learning of library-use skills that can rival the amount of skills acquisition that is provided in library-use instruction. It is important to note that library-use instruction can be shown to have effects superior to those of academic background in both aggregate comparisons and the panel study setting, a fact that adds greatly to the contention that library-use instruction has firm value and lasting effects.

#### USE OF EVALUATION RESULTS: A CAUTIONARY NOTE

Werking has expressed particular concern with respect to the use of quantitative evaluation results as "proof" of a library-use instruction program's success.<sup>19</sup> This is certainly a legitimate concern, and the authors want to insert a cautionary note into this article for those planning to conduct evaluations in order to gain support for their programs. In their previous article on the DePauw University library instruction program, the authors reported use of the results of their evaluation to successfully gain administrative support for a grant proposal to continue the library-use instruction program.<sup>20</sup> Such use of evalu-

TABLE 4  
FACTORS ASSOCIATED WITH SHORT-TERM  
AND LONG-TERM CHANGES IN LIBRARY-USE SKILLS\*

	Short-Term Changes			Long-Term Changes		
	Corr. Coeff.	No. Cases	Stat. Sig.	Corr. Coeff.	No. Cases	Stat. <sup>†</sup> Sig.
<i>Measures of Academic Background</i>						
SAT, verbal	.19	77	.05	.16	77	Not sig.
GPA	.19	82	.04	.08	82	Not sig.
<i>Measures of Exposure to Library-Use Instruction</i>						
Number of upper-division courses	.11	82	Not sig.	.38	82	.0002
Total exposure to instruction, freshmen through graduation	.30	82	.003	.41	82	.0001

\*Panel study results of correlations between changes in skill level, exposure to library-use instruction, and academic background (Pearson Correlation Coefficients).

<sup>†</sup>Result listed as not statistically significant if *p* is greater than .05.

Note: Short-term and long-term change scores are calculated on the basis of the difference (positive or negative) between the preinstruction skills score and the first and second skills tests for each respondent.

ation in decision making is neither automatic nor common.

Some evaluators contend that the main purpose of evaluation is simply to improve learning and instruction, and that all other uses are secondary or supplementary to this purpose.<sup>21</sup> However, if the ultimate purpose of evaluation is to contribute to decision making pertaining to the improvement of the effectiveness of library programs, the implementation of evaluation results is a critical consideration.<sup>22</sup> Carol Weiss has noted that while careful and unbiased evaluations should ideally improve decision making in a rather automatic fashion, evaluation is always a rational enterprise that takes place in a political context. The evaluator who fails to recognize political considerations "is in for a series of shocks and frustrations."<sup>23</sup>

Additionally, Werking, in citing the example of the abandonment of a teaching method *not* because it was ineffective, but because it was believed to be nonessential, points to an ever-present problem in using quantitative evaluation techniques to gain support for a library-use instruction program.<sup>24</sup> Library-use instruction programs are sometimes considered to be "amenities" by decision makers such as college administrators, classroom instructors, and library directors. According to Benjamin Bloom, however sophisticated and

elegant quantitative evaluations might be, they "are likely to have little effect if they are considered to be measuring trivial things which are not regarded as important by the students, teachers, patrons, and others."<sup>25</sup>

A certain amount of groundwork is necessary before any type of formal evaluation of a program is attempted. As noted by Howard Davis and Susan Salasin, newcomers to evaluation too often take effective use of evaluation for granted, with the result that evaluation results often end up being ignored.<sup>26</sup> Librarians interested in evaluating their library-use instruction programs would do well to recall the wise observation of Suchman: "Both the demand for and the type of acceptable 'proof' (of program effectiveness) will depend upon the nature of the relationship between the social institution and the public. In general, a balance will be struck between faith and fact."<sup>27</sup> Any librarian seriously considering the formal evaluation of his or her instructional program would be well advised to respect the limitations of both methodology and practical politics involved,<sup>28</sup> and take heart that in time well-conceived and rigorously conducted evaluations of program effects will have an increasingly important role in the management of college and university instructional resources.

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1. Charles Dudley Warner first wrote in an editorial in the *Hartford Courant* in 1890 that "everybody talks about the weather, but nobody does anything about it." Even back then it was so often attributed to Mark Twain that Charles Hopkins Clark, editor of the *Courant* wrote: "I guess it's no use; they still believe Mark Twain said it, despite all my assurances that it was Warner."
2. Richard Hume Werking, "Evaluating Bibliographic Education: A Review and Critique," *Library Trends* 29:153-72 (Summer 1980).
3. Larry Hardesty, Nicholas P. Lovrich, Jr., and James Mannon, "Evaluating Library-Use Instruction," *College & Research Libraries* 40:309-17 (July 1979).
4. A third goal of the earlier study was to document the effects of library-use instruction on short-term changes in attitudes toward the library. The earlier study was largely unsuccessful in addressing questions relating to attitudinal changes, and the authors concluded "that

either attitudes about libraries are far more difficult to influence or measure than are library-use skills, or the particular program at DePauw University was less effective in influencing attitudes than it was in influencing library-use skills." The same attitude-measure instrument was used in the long-term study reported in this article and the results and conclusions are the same as in the earlier study. For an interesting discussion of a long-term study of student attitudes toward library-use instruction, the reader is referred to Roland Person, "Long-Term Evaluation of Bibliographic Instruction: Lasting Encouragement," *College & Research Libraries* 42:19-25 (Jan. 1981). However laudable Person's efforts and support of library-use instruction, his conclusions must be accepted with some reservations. Most critical is his reliance on a low return rate (26 percent) from students, most of whom had originally volunteered to enroll in a library-use instruction course. With such self-

selection and low return rate the reader does not know what a majority of the students who took the course thought, let alone what a majority of the student body might think of such a course. There are other concerns with the article, but this criticism is not intended to discourage Person and others from conducting such studies. It is intended to encourage the "better research" in the area of library-use instruction that both Person and the authors agree is needed.

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11. John W. Evans, "Head Start: Comments on the Criticism," in Francis G. Caro, ed., *Readings in Evaluation Research* (New York: Russell Sage, 1971), p.401.
12. Charles S. Reichardt and Thomas D. Cook, "Beyond Qualitative versus Quantitative Methods," *Qualitative and Quantitative Methods in Evaluation Research*, p.19.
13. Ibid., p.17.
14. John Mueller and others, *Statistical Reasoning in Sociology* (2d ed.; Boston: Houghton, 1970), p.3.
15. Hardesty, Lovrich, and Mannon, "Evaluating Library-Use Instruction," p.313.
16. The importance of individual-level verification of aggregate comparisons cannot be over-emphasized, particularly in the analysis of change along a temporal dimension. As a simple illustration one might consider the nightly newscast of electoral attitude changes occurring in the course of an election. Say a report of candidate preference in September shows candidate X with a 50 percent approval rating, and another survey in November shows the same result—50 percent approval. Could we conclude that no voters changed their preferences during the campaign? Could we assume that all voters changed their minds—i.e., all of those who favored X now favor another candidate and all of those who favored other candidates now favor X? Sadly enough, *either* of these explanations could be true—or neither could be true; perhaps an equal proportion (large or small?) of voters moved both toward and away from a preference for X. As is quite evident, without *individual* level comparisons wherein the changes in preferences of individuals can be observed varying over time, none of these hypothetical explanations of attitude change can be accepted.
17. Hubert M. Blalock, Jr., *Social Statistics* (2d ed.; New York: McGraw-Hill, 1972), p.429-72.
18. W. S. Robinson, "Ecological Correlations and the Behavior of Individuals," *American Sociological Review* 15:351-57 (June 1950).
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## Zero-Base Budgeting for Libraries: A Second Look

*"Zero-base budgeting" (ZBB) was given considerable attention in the management literature during the latter 1970s. ZBB offers many concepts and budgeting techniques that may prove especially useful to library administrators in the budget-tight 1980s. This article includes a brief review of the key features of ZBB as a budgeting/planning system, a discussion of the applications of ZBB reported in the literature, and a summary of the special benefits and problems for libraries that use of concepts derived from ZBB, if not ZBB itself, might provide.*

THE CARTER ADMINISTRATION has come and gone, and with it much of the earnest discussion about the virtues of "zero-base budgeting" (ZBB), that much-heralded 1970s tool of budgetary analysis and control. But is there yet value to be found in ZBB? What elements, what concepts, what ideas embodied in ZBB might be of continuing use to libraries and other service organizations facing the budget-cutting demands of the 1980s? How might library administrators assess ZBB now?

As with so many other issues, the library manager might well first turn to the work of Peter Drucker to gain a better perspective, to find a framework within which ZBB may be examined. Drucker observes that "few managers attempt to think through the changed circumstances in which they operate. Most believe that all that is required is to run harder and to raise more money." Including librarians in his audience, Drucker asserts that the manager "must constantly ask the unpopular question: 'Knowing what we now know, would we get into this activity, this service, this effort if we were not already in it?'" Drucker's instruction to any manager who answers in the negative is clear and to the point: "He should find a way to get out of that service as quickly as possible. At the very least, he should ask himself how methods should be changed to accomplish what his

institution originally set out to accomplish."<sup>1</sup> In the same vein, Herbert White's advice to librarians of the 1970s and 1980s to "take increasingly hard looks at the tasks we perform, the services we provide, the materials we acquire . . . using advanced techniques of measurement and cost-effectiveness evaluation," admits to the pain, but stresses the opportunities, that "strong management [and] intense critical examination" offer.<sup>2</sup>

For library administrators to act on the advice offered by Drucker and White, they must know with some confidence what the library is doing, be able to determine the costs of the library's activities, have methods to evaluate how well those activities correspond to the expressed priorities of the library, and then work to develop means to effect any needed changes by reallocating the library's resources. These are of course the basic components of any well-ordered management program of analysis, planning, program execution, and evaluation. At the center of this management process must be the budget, the vehicle that brings together and displays much of the information required both to analyze and evaluate the library's operations and to make decisions about the future direction of the organization. Whatever form or structure of budgetary system is used by a library, indeed any organization, it must, therefore, meet one critical test: Does it provide timely information of adequate quality and sufficient detail needed by the people who make and execute policy?

William J. Crowe is assistant to the director, University Libraries, Ohio State University.

Toward this end, government and business have been subject to several waves of budgetary/management theory since the 1930s: performance budgeting, program budgeting, PPBS (planning, programming, and budgeting system), and, most recently, ZBB. These systems all share an overarching objective: to assist managers in building a rational budgeting structure to replace what has often appeared to be a highly confused, unreasoned (i.e., "political") process for organizational decision making. The impact of these systems on libraries in the United States has not so much been one of wholesale adoption, but in many instances the adaptation of some of the tools and techniques employed by these systems. Cost-analysis and system analysis, for example, are management tools often cited in the literature of library management and are now familiar to many library administrators.

ZBB has only recently been discussed in any depth in library-related literature. Indeed, Martin's *Budgetary Control in Academic Libraries* (1978) makes only passing reference to the subject.<sup>3</sup> Charles W. Sargent, in the January 1978 issue of the *Bulletin of the Medical Library Association*, provides a very basic description of ZBB and its hypothetical application in a library, but he does not discuss at any length the possible organizational consequences for a library that might adopt ZBB.<sup>4</sup> An effort at implementing the terminology and display format of ZBB (although not the process itself) at the Lockwood Library of the State University of New York at Buffalo was reported by Diane C. Parker and Eric J. Carpenter later in 1978.<sup>5</sup> But it was not until 1980 that the library literature included a book-length compendium on ZBB, Ching-chih Chen's *Zero-Base Budgeting in Library Management: A Manual for Librarians*,<sup>6</sup> based in large part on material covered by the author during institutes offered on ZBB in 1978. ZBB, in theory and application, is still best described in several general works, the best of them the seminal *Zero-Base Budgeting: A Practical Management Tool for Evaluating Expenses*, by Peter Pyhrr, the father of ZBB.<sup>7</sup>

In order to evaluate the potential value of ZBB, or ZBB-related ideas, for libraries (and before outlining its major elements), it is essential to keep in mind the budgetary con-

cepts included in a brief statement (made in pre-ZBB 1952) by Verne B. Lewis:

The basic objective of budget analysis is the comparison of the relative value of results to be obtained from alternative uses of funds. . . ; costs and results must be considered together. The costs must be judged in relation to the results and the results must be worth their costs in terms of *alternative results that are foregone or displaced*.<sup>8</sup>

[Emphasis added.]

The distinctive feature of ZBB, as a budgeting system, has been its insistence that operating managers (e.g., department or branch heads in a library) participate actively in the budgeting process by *analyzing* the operations of their units, *categorizing* each into discrete "decision packages," and then *ranking* the packages according to their judgment of the importance of the activity. Each decision package must include (1) a succinct statement of the purpose and value of the activity, (2) cost analysis, (3) alternative means (and costs) for achieving the same purpose, (4) measures of performance (with a statement of the consequences for *not* performing the activity), and (5) a statement of the benefits of the activity. Subsequently, the manager's supervisors at each level of responsibility review and rank all packages in the larger organizational context. This is, of course, only a brief description of what can become a very complex process.

Accounts of the planning and training required to implement ZBB, especially in state governments, and of the frustrations and difficulties encountered during and after implementation, have been vividly described. The reports of benefits derived from the process, however, are in some cases presented with equal fervor. What some administrators have seen as a major flaw in ZBB, others view as an asset. The most telling example of this conflict of views is an often strongly expressed difference of opinion about the desirability of any substantive involvement by lower- and middle-level managers in the budgeting process. Widely reported as a benefit to the organization's overall management, active participation in budgeting by unit managers is also often represented as imposing far too heavy a burden on people whose skills, abilities, and experience should be more properly employed in the oversight of the day-to-day operation of their units.<sup>9</sup>

Much of the criticism that was directed at PPBS in the 1960s, and much of the same sometimes cynical suspicion, has been repeated by critics of ZBB. Administrators whose operations have been justified by precedent, political considerations, and subjective judgment are often skeptical of "total systems" that promise more, or seem to promise more than what they view as practicable. Pyhrr has attempted to answer such critics by stressing the differences between PPBS and ZBB, especially by describing critical gaps in PPBS:

1. PPBS focuses on *what* will be done, not *how* to do it.
2. PPBS does not provide any effective operating tools for line managers.
3. PPBS does not provide a mechanism to evaluate the impact of various funding levels for a program or establish priorities among programs and varying levels of program effort.

Pyhrr contrasts PPBS as "basically a macroeconomic, centralized, top-down policy and long range *planning* tool" [emphasis added], with ZBB as essentially a microeconomic, decentralized, down-top policy and short range *management* tool.<sup>10</sup>

The compelling attraction of ZBB for many administrators has been, and continues to be, its promise of providing a means by which spending might be held in check, if not reduced, by requiring that the goals of the organization, the programs that have been determined to be most important to achieve those goals, and the alternative methods and costs necessary to carry out those programs, be stated in *categorical* terms. ZBB promises "a system that rationally [breaks] up all spending requests—both old and new—into understandable, manageable alternatives [to enable] people . . . to discover the truth and falsity in each and [allows] *all to compete on equal footing for scarce budget dollars*."<sup>11</sup>

It would be foolhardy to assert that ZBB or *any* management/budgeting system, applied by *any* administrator in *any* library will produce an administrative millennium. For example, one proponent of ZBB cautions against use of ZBB if an organization has a total annual budget of less than \$1,000,000, fewer than seventy-five staff members, or if other major changes are taking place in the

organization.<sup>12</sup> It would be equally unwise, however, to give comfort to the seat-of-the-pants manager whose intuitive assessments of the library's political environment are the primary, if not the sole, basis for planning and resource allocation. To be sure, "people are more potent than numbers or logic."<sup>13</sup> But to suggest that so-called commonsense management has a monopoly on sensitivity to people or that all comprehensive management/budgeting systems are wildly impractical, even antithetical to effective administration, risks offering unwarranted comfort to the administrative Luddite.

However important may be the choice of a structure or technique in budgeting, it is clearly the *use* of budgeting structure and technique by administrators that is most important. Budgetary planning "is too critical to be left to the casual, infrequent attention of someone whose main interests lie elsewhere,"<sup>14</sup> and if the leadership of a library does not have the will to manage or the ability to identify and articulate the central issues that face the library, techniques of budgetary formulation will matter little. However, if administrators are willing to consider the possibility that library operations and services might be changed for the better, or if serious budgetary reductions are expected, then the choice of a framework for budgeting becomes most important.

Practical application of ZBB in large service organizations is not yet so widespread or advanced that any firm assessment of its potential usefulness in libraries may reasonably be made. The examples cited in Chen's work represent either very recent (i.e., post-1977) implementation of ZBB or very small (corporate and college) library experience. No large public, academic, or research library experience is included.

It is clear that the implementation of ZBB in any large labor-intensive service organization, in the "third sector," to use Drucker's term, clearly would present some special problems:

1. Many unit managers—and administrators—have not been prepared to evaluate rigorously and rank the relative benefits and effectiveness of service programs.
2. Many unit managers are notably reluctant to propose budgeting changes that would require significant shifts in the assign-

ments of staff members or in the pattern of staffing generally.

3. The organization's reward system for managers—and for their units—has traditionally been one of adding money to most unit budgets, not reducing them, as presumably would be encouraged with rigorous implementation of ZBB.

4. Since most libraries operate as a subordinate unit of a larger organization, the choice of what budgeting structure is to be used is rarely at the discretion of the library; if ZBB is not adopted at the higher organizational level, the library's staff might well be faced with an unacceptably high level of paperwork to prepare budgets in two different formats.

Yet the elements of ZBB theory remain compelling simply because they require managers to manage, i.e., to "identify and analyze what . . . they plan . . . to do in total, set goals and objectives, and evaluate changing responsibilities and work loads—not after the budgeting process, but during it, as an integral part of the process."<sup>15</sup>

There is, then, as with most "new" systems, nothing truly new in ZBB. But ZBB does provide a well-structured mechanism for management decision making at a time when funding constraints present special challenges for library budget makers. For that reason, if for no other, the principles of ZBB, if not the process itself, continue to merit careful attention by librarians.

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## Journals Read by ACRL Academic Librarians, 1973 and 1978

*A study was undertaken to identify the amount and kinds of professional journal reading being done by ACRL academic librarians, with data drawn from two separate surveys made over a five-year period of time. Questionnaires were sent to a sample of ACRL members in 1973 and again in 1978, which ascertained how many journals they were reading regularly and what the titles of those journals were. Illustrations provide a comparison of most frequently read titles for 1973 to 1978, with the percentage of reader response for each title. For both years surveyed, ACRL academic librarians averaged approximately seven journals read on a regular basis. A separate analysis of the 1978 data indicated that 7 percent of the titles cited as being read accounted for 80 percent of the journal reading. As had been the case in 1973, more than nine in ten of these academic librarians were regular readers of College & Research Libraries (C&RL). However, several other titles heavily cited in 1973 lost readership among ACRL members due to the dramatic appearance of the Journal of Academic Librarianship.*

THE SOLIDIFIED INTEREST in the use of information and in the audiences of information systems, is a fundamental development of the last two decades. With a combination of eclectic techniques and methods ranging from citation analysis and other bibliometric techniques, to the investigation of the actual information-seeking behavior of users, we have begun the arduous yet important task of describing and generalizing the information-seeking behavior of our audiences.

Curiously, there remains at least one audience that lags far behind as a focus of such attention and subsequent analysis. While our research has something to say about the scientist and the engineer, the student and the researcher, the physician, the disciplinarian, it has very little to say about the information-seeking behavior of a profession whose very reason for existence is facilitating the flow of information: academic librarians.

As academic librarians, we make decisions daily about whether or not to seek out information, and where and how to acquire it. To aid in the articulation of academic librarians' information needs, it is important to identify the journals ACRL academic librarians tend to read regularly. Do academic librarians read journals that are more closely associated with traditional definitions of their collective purview (administration, technical services, reference, the publishing industry, etc.), or do the titles that they read allow us to redefine the scope of their collective professional concern? What are the other journals that academic and research librarians read regularly? Have these patterns of readership changed over time?

### RELATED RESEARCH

Several studies have included the number of professional journals read by librarians and have used this information-seeking behavior as an indicator of professionalism (Stone, Nash, Plate, McClure).<sup>1-4</sup> Stone created an index to measure professionalism

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Robert Swisher is associate professor and Peggy C. Smith is assistant professor, School of Library Science, University of Oklahoma at Norman.

that included familiarity with professional literature.<sup>5</sup> Her sample was not limited to academic librarians, however, which was also the case with Nash's survey, in which he measured communication characteristics of public library administrators.<sup>6</sup>

There have been studies devoted to the examination of professional characteristics and behavior of academic librarians,<sup>7,8</sup> but ACRL membership has not been surveyed as a target population. In addition, the comparability of the results of such studies suffers in that "reading" is defined operationally in various ways: scanning a journal issue, subscribing to journal titles, reading for certain purposes only, etc. However, these studies do offer benchmarks concerning typical behavior and are therefore useful.

There are also limited data available concerning the specific titles read by librarians. Target populations for these studies vary considerably, of course, and reflect the specific interests of these groups.<sup>9</sup>

An indication of the potential diversity of professional reading for academic librarians is pointed out in articles whose authors champion reading journals related to information science, nonlibrary specializations,<sup>10</sup> administration, and higher education.<sup>11</sup>

#### INSTRUMENT DEVELOPMENT AND SURVEY DESIGN

In the spring of 1973 data were collected by questionnaire on the communication behavior, job/situational, and education characteristics of academic librarians holding membership in the Association of College and Research Libraries (ACRL). Of the instrument's twenty-two questions, two dealt specifically with the reading behavior of ACRL academic librarians. In November 1978, five and a half years later, the same questionnaire was sent to a second sample of ACRL academic librarians.

The research instrument, developed in 1973, and used for both the 1973 and 1978 data collection, was a synthesis of new items and items adopted from two existing instruments, one developed by Stone,<sup>12</sup> the other by A. Schiller.<sup>13</sup> Stone's work had identified several dimensions of professional communication, while Schiller's study offered baseline data on the characteristics of a large sample of academic librarians. Instrument develop-

ment included modifications suggested by a panel of content experts and a pretest on a sample of thirty members of the population. Using both a postcard technique<sup>14</sup> to ensure anonymity, and a second wave for nonrespondents, the following results were obtained: Of the three hundred ACRL members sampled in 1973, 259 (or 86.3 percent) returned usable questionnaires within forty-five days. The response rate for the 1978 sample was 83.2 percent, with 357 usable questionnaires returned from 429 ACRL members. One question dealt with the library-related titles they read regularly for purposes other than materials selection; another question asked about other (nonlibrary) professional titles they read regularly.

#### SAMPLING

The sampling frame for the 1973 data was taken from the 1972 *American Library Association Membership Directory*, a directory that included more than 31,000 entries. From the directory, a list was drawn of 4,100 individuals, including all personal, nonstudent, and noninstitutional members of the Association of College and Research Libraries who could be identified as having an affiliation with an academic or research library in the United States.

In the absence of other current supplementary evidence of population variability, the pretest statistics concerning the total number of memberships held in professional, scholarly, and honorary organizations were used in determining minimum sample size needed. The formula used to estimate the minimum sample size needed for this 1973 survey was that given by Cochran for continuous data in the presence of a finite population.<sup>15</sup>

Selecting a confidence interval of 95 percent, and a half-width of 5 percent of the value of the mean, a minimum sample size of 240 was determined. Considering the age of the directory information from which this sample was drawn, as well as the typical amount of nonresponse and unusable returns to be encountered in questionnaire mailings, the computed minimum sample size was increased by 25 percent, or sixty names, and the final sample size drawn randomly from the sampling frame was 300 names.

Although the percentage of usable re-

sponses received from the 1973 sample was quite high (86.3 percent), a simple check was made during data analysis to assess nonresponse bias.

The results of these analyses indicated that there was no evidence to suggest that the responses of early respondents systematically differed from the latest respondents. As had been expected in light of the high response rate, there was no evidence of nonresponse bias.

The procedures and instrument used for the 1978 survey of college and research librarians holding membership in ACRL were comparable to those used in gathering the 1973 data.

The directory used to obtain the 1978 sample was a current printout of 7,110 individuals holding personal membership in ACRL. Instead of actually determining that exact subset of the 7,100 who fit the criteria for inclusion in the sampling frame, the investigators choose rather to (1) take a larger systematic random sample than was estimated to be necessary, (2) analyze this much shorter list against the inclusion criteria, (3) discard names of individuals who could be definitely verified as not currently employed in college or research libraries, and (4) send questionnaires to those who still could not be definitely verified as appropriate. A note requesting that they disregard the questionnaire if they were not a member of the target population was included with a request to return the enclosed postcard with an indication of their current job status.

Questionnaires were sent to 503 persons, including a questionable group of 158 who could not be verified as appropriate.

Including two waves of mailings with questionnaires returned over a period of forty-eight days, 373 questionnaires and 71 postcards indicating inappropriateness to respond were received. Of the 373 questionnaires returned, 357 were complete and usable for data analysis.

In light of data gathered through the special note applied to those questionnaire recipients who the investigators could not determine to be members of the target population, at most 429 members of the sample of 503 were actively employed in academic and research libraries. The response rate to the 1978 survey was therefore at least 83.2 percent and probably higher since an unknown portion of the nonrespondents were not members of the target population, but didn't return their postcards indicating that fact. As was the case with the 1973 survey data, checks were made to determine any differences between early and later responses. Again, no systematic differences were detected, and considering the high response rate it was concluded that serious nonresponse bias did not exist.

#### DATA DESCRIPTION

As can be seen from table 1, two of the three measures of central tendency were quite similar for both the total number of journals read among the 1973 respondents and the 1978 respondents. In general, both groups were regularly reading close to seven journals on the average. However, it was the case that the 1978 distribution exhibited more positive skew than the 1973 distribution. In terms of variability, the 1978 sample yielded a slightly larger standard deviation

TABLE 1  
DESCRIPTIVE STATISTICS AND CONFIDENCE INTERVALS  
FOR NUMBER OF LIBRARY, NONLIBRARY, AND TOTAL JOURNALS  
READ BY 1973 AND 1978 SAMPLES OF ACRL ACADEMIC LIBRARIANS

	Library	1973 Nonlibrary	Total	Library	1978 Nonlibrary	Total
Central Tendency	5.8	1.0	6.8	5.9	1.3	7.2
Mean	5.1	0.4	6.1	5.4	0.6	6.4
Mode	3.0	0.0	3.0	5.0	0.0	5.0
Dispersion						
S.D.	3.4	1.5	4.1	3.3	1.9	4.4
Range	20.	7.	25	28	18	46
95% C.I.						
Low	5.4	0.8	6.3	5.6	1.1	6.7
High	6.2	1.2	7.3	6.2	1.5	7.7
Skew	0.9	1.6	1.1	1.7	2.9	2.5

and a much higher absolute range. While the 1973 sample ranged from no journals read to twenty-five journals read regularly, the 1978 sample ranged from zero to forty-six. Still, there was no significant difference between the mean number of journals read between the two samples: the 95 percent confidence interval ranged from 6.27 to 7.34 for the 1973 data, and overlapped with the confidence interval of 6.73 to 7.65 for the 1978 data.

The total number of journals read was actually a computed variable composed of two separate components; library-related journals read and nonlibrary professional journals read. Again, comparing 1973 data with 1978 data, there was no significant difference according to the average number of library journals read by these academic librarians. In 1973, an average of 5.78 library journals were read regularly. In 1978, the mean number of library journals read was 5.9. It can be seen from the comparison of the confidence intervals that no significant differences existed. Again, the range for the 1978 data was larger; however, there was less variability in terms of the standard deviation. Also, the amount of positive skew again increased from 1973 to 1978.

It is interesting to note that similar studies support the wide range of number of journals read by librarians. For example, Plate's study indicates that 48 percent of the respondents read between five and nine journals.<sup>16</sup> Although Stone's study yields a slightly lower average number of journals read, Stone's population of library school graduates read an average of 3.6 library journals regularly.<sup>17</sup> Another investigation including public library administrators provided an average of 2.37 library periodicals read on a regular basis.<sup>18</sup>

The nonlibrary journals read, both in 1973 and 1978, was low. In 1973 the librarians read on the average one nonlibrary professional journal regularly during the previous twelve months. In 1978, that mean figure increased to 1.3. In both cases the modal value was zero: most academic librarians were not reading any nonlibrary journals regularly. Quite consistently the 1978 distribution exhibited more skew than 1973 distribution. Also, the range of nonlibrary journals read was considerably higher in 1978. As

was the case with the comparison of total journals read and library journals read from 1973 to 1978, there was no practical difference between the 95 percent confidence intervals.

Again, the average number of nonlibrary journals read by library school graduates in Stone's survey was less than the average number read by academic librarians in this survey. Stone's survey results in 1971 revealed that 58.8 percent of the academic librarians were not reading regularly any other professional journals.<sup>19</sup>

Eighty-five percent of the 1973 journals read were library titles. Eighty-two percent of the 1978 journal reading was from library-related journals. The striking features of the comparison across five years were the similarities. Measures of central tendency were essentially the same. The only differences worthy of mention concern dispersion and skew. For both range and skew the 1978 data were higher than the 1973 data. While the averages were the same, the 1978 sample showed greater variability. Of the three distributions (nonlibrary, library, and total journals read), nonlibrary journals read appears to fit most closely the characteristics of a Poisson distribution, a distribution that applies to infrequently occurring events.<sup>20</sup>

## RESULTS

The left side of table 2 shows, in decreasing rank order, the seventeen most frequently cited journal titles for the 1973 baseline sample. The frequency of the first two titles, *American Libraries* and *College & Research Libraries*, was anticipated since membership in the ACRL means the reception of both titles automatically. Indeed, it could be posited that the frequency with which they were cited was actually low; after all, 10 percent of these ALA academic librarians were not reading the official publication of the professional association in which they held membership. Fourteen percent of the respondents were not reading the official journal of the specific division within ALA to which they belonged. Yet, the purposely restrictive definition of reading could have accounted for this discrepancy; "regular reading" was defined on the questionnaire as almost never missing an issue, and it was further stipulated that titles only glanced through quickly were



TABLE 2  
RANK ORDER OF THE SEVENTEEN MOST FREQUENTLY READ  
JOURNALS IN 1973 AND 1978, WITH PERCENT READING

1973			1978		
Rank	Title	Percent Reading	Title	Percent Reading	
1	<i>American Libraries</i>	90.0	<i>American Libraries</i>	92.2	
2	<i>C&amp;RL</i>	86.1	<i>C&amp;RL</i>	88.6	
3	<i>LJ</i>	69.9	<i>LJ</i>	69.3	
4	<i>LRTS</i>	57.9	<i>JAL</i>	44.0	
5	<i>RQ</i>	38.2	<i>LRTS</i>	36.3	
6	<i>WLB</i>	37.4	<i>RQ</i>	33.3	
7	<i>PW</i>	30.9	<i>WLB</i>	27.4	
8	<i>Lib Trends</i>	23.6	<i>PW</i>	26.0	
9	<i>Lib Quarterly</i>	22.8	<i>Lib Trends</i>	20.0	
10	<i>JOLA</i>	20.9	<i>Chronicle Higher Ed</i>	19.7	
11	<i>Special Libraries</i>	17.4	<i>Lib Quarterly</i>	18.0	
12	<i>JASIS</i>	12.4	<i>Special Libraries</i>	17.5	
13	<i>AAUP Bulletin</i>	8.9	<i>JOLA</i>	16.1	
14	<i>JEL</i>	6.6	<i>JASIS</i>	10.0	
15	<i>LC Information Bul</i>	4.6	<i>Change</i>	5.8	
16	<i>Chronicle Higher Ed</i>	4.6	<i>AAUP Bulletin</i>	5.0	
17	<i>Today's Education</i>	4.6	<i>Today's Education</i>	4.7	

not to be counted. In any event, it was still the fact that these two titles alone accounted for fully one-fourth of the regular reading done by the 1973 group.

The third title, *Library Journal* (*LJ*) was the only title in the first five not published by the association, and seven in ten members of the 1973 sample read it regularly. The high rankings of the next two titles, *Library Resources & Technical Services* (*LRTS*) and *RQ*, as well as their rank relative to one another, almost surely reflected a degree of overlap with the other ALA divisions they represent. A related fact was that a higher percentage of the 1973 respondents viewed their job activity as involving technical services (48.2 percent) than those who indicated that their professional activity was related to public services (43.6 percent).<sup>21</sup> (The first five titles, four of which were published by the association, accounted for one-half of the reading of the 1973 sample.)

The final ALA publication ranked in the top seventeen titles was the *Journal of Library Automation* (*JOLA*). *JOLA*, which ranked tenth, was read regularly by 21 percent of the first sample. Heading the list of titles ranked fifth through tenth, however, were *Wilson Library Bulletin* (*WLB*), and *Publishers Weekly* (*PW*)—two titles published by commercial publishers closely associated with libraries and librarianship. *Library Trends* and *Library Quarterly*, the

eighth and ninth titles, were unique among the top ten in that they were university press publications editorially associated with professional library education. Of the first ten titles (which cumulatively accounted for, now, 70 percent of the reading done by the first sample), three were commercial products, two were products of academe, and five were the products of the association.

The remaining titles on the list of seventeen most frequently cited were very different from the first ten in terms of sponsorship. Five of these titles indicated at least shared interests in, if not actual membership in, other organizations: Special Libraries Association, the American Society for Information Science, the American Association of University Professors, the American Association of Education for Librarianship, and the National Education Association. The two other titles, *Library of Congress' Information Bulletin* and the *Chronicle of Higher Education*, were tied at rank sixteen with the *NEA Journal*, and all seventeen titles together accounted for slightly less than 80 percent of the first sample's journal reading.

#### Results—Titles—1978

A comparison of the seventeen most frequently mentioned titles between the baseline sample of 1973 and the sample five years later reveals instances of both great stability and dramatic change (see table 3). As indi-

TABLE 3  
RANK ORDER OF THE TWENTY-SIX MOST FREQUENTLY READ JOURNALS  
IN 1978, WITH PERCENT READING, PERCENT OF ALL TITLES CITED

Rank	Titles	Percent of Respondents Reading	Cum Percent of All Titles Cited	Cum Percent of All Reading Done
1	<i>American Libraries</i>	92.2	0.25	13.0
2	<i>College &amp; Research Libraries</i>	88.6	0.50	25.4
3	<i>Library Journal</i>	69.3	0.75	35.2
4	<i>Journal of Academic Librarianship</i>	44.0	1.00	41.4
5	<i>LRTS</i>	36.3	1.25	36.5
6	<i>RQ</i>	33.3	1.50	51.2
7	<i>Wilson Library Bulletin</i>	27.4	1.75	55.0
8	<i>Publishers Weekly</i>	26.0	2.00	58.7
9	<i>Library Trends</i>	20.0	2.25	61.5
10*	<i>Chronical of Higher Education</i>	19.7	2.50	64.3
11	<i>Library Quarterly</i>	18.0	2.75	66.8
12	<i>Special Libraries</i>	17.5	2.98	69.3
13*	<i>JOLA</i>	16.1	3.23	71.5
14	<i>JASIS</i>	10.0	3.48	72.9
15*	<i>Change</i>	5.8	3.73	73.8
16*	<i>AAUP Bulletin</i>	5.0	3.98	74.5
17*	<i>Today's Education</i>	4.7	4.23	75.1
18	<i>Journal of Education for Librarianship</i>	4.2	4.48	75.2
19*	<i>Serials Librarian</i>	3.6	4.73	76.2
20.5*	<i>LC Information Bulletin</i>	3.3	5.22	—
20.5*	<i>Doc. to the People</i>	3.3	5.22	77.1
22.5*	<i>AVI Audiovisual Instruction</i>	3.1	5.97	—
22.5*	<i>Science</i>	3.1	5.97	78.4
24.5	<i>Government Pub. Review</i>	1.9	6.96	—
24.5*	<i>Illinois Libraries</i>	1.9	6.96	79.6
26	<i>American Archivist</i>	1.7	7.21	79.8

\*Journal was not listed on the questionnaire, but respondents listed in addition to titles provided.

cated in the right side of table 2, the first three titles—*American Libraries*, *C&RL*, and *Library Journal* retained their previous order of frequency, and showed no significant gain or loss in percentage of respondents reading them: it was still the case in 1978 that nine in ten were reading *American Libraries*, followed closely by *College & Research Libraries*. Also, seven in ten still read *Library Journal* regularly. A dramatic change, though, was the high percentage of readership captured by a title introduced into the market after the 1973 survey: the *Journal of Academic Librarianship* (JAL). Fourth on the 1978 frequency ranking and read by 44 percent of the sample, JAL was preceded by only *Library Journal* as a non-ALA publication read by academic librarians holding membership in ACRL.

At this point in the analysis of the 1978 list it is important to note that only three of the journal titles on the earlier list of the top seventeen titles had actual gains or losses exceeding 5 percent. *LRTS* dropped from 57.9 per-

cent of readership to 36.3 percent readership, *Wilson Library Bulletin* dropped from 37.4 percent to 27.4, and the *Chronicle of Higher Education* increased from 4.6 percent in 1973 to 19.7 percent in 1978. The greatest absolute change, a loss of 21.6 percent, was suffered by *LRTS*, and is most probably accounted for by two factors: (1) it was partially displaced by the appearance of *JAL*; and (2) the percentage of respondents who claimed that their major library activity was solely in a technical service area or in the administration of a technical service area, dropped from 32.8 percent of the 1973 sample to 17.0 percent of the 1978 sample—the composition of the ACRL membership had also changed in the interim.

*RQ*, ranked sixth in reading frequency in 1978, lost 4.9 percent from its baseline percentage—again probably due to the appearance of *JAL*. Indeed, it fared better than it might have, considering the losses of the titles just above and below it on the 1978 list. However, with the loss of librarians involved

in technical services as a percentage of the composition of the 1978 sample, came a comparable rise in the percentage of public service librarians, which increased from 28.2 percent of the 1973 sample to 38.1 percent of the later sample. The percentage loss of *Wilson Library Bulletin*, however, could not be explained by some degree of give and take among divisions within ALA, as could that of *LRTS* and *RQ*.

Comparatively insignificant losses were associated with the eighth and ninth titles on the 1978 list, *Publishers Weekly* and *Library Trends*. The *Chronicle of Higher Education*, ranked tenth in 1978, made a dramatic gain over the 1973 baseline data. While only 4.6 percent of the earlier sample of ACRL members read it regularly, 19.2 percent attended to it in 1978.

Again, insignificant changes occurred for the next four journals on the 1978 list—*Library Quarterly*, *Special Libraries*, *JOLA*, and *JASIS*. *Special Libraries*, in fact, held the same percentage of the ACRL audience in spite of the appearance of two new titles ranked above it in 1978, *JAL* and the *Chronicle*. *Change* magazine, ranked above it in 1978, increased in audience percentage from 1.5 percent to 5.8 percent. *AAUP Bulletin*, which ranked thirteenth and was read by 8.9 percent of the earlier sample, dropped to a rank of sixteen in 1978 and lost more than one-half of its share of the reading audience. The *Journal of Education for Librarianship* (*JEL*) and the *LC Information Bulletin* were missing from the 1978 list of top seventeen titles; however, *JEL* only dropped from 6.6 percent in 1973 to 4.2 percent in 1978. Similarly, *LC's Information Bulletin* dropped from 4.6 to 3.3 percent.

Of the twenty-five journals listed, it is interesting that two of the top fifteen most frequently mentioned are nonlibrary-related journals, the *Chronicle of Higher Education* and *Change* magazine.

The *Chronicle of Higher Education* was regularly read by 20 percent of the respondents, although approximately half of the publication is job announcements, a fact that might help explain why the *Chronicle* is ranked higher than *Library Quarterly* or *Special Libraries*. However, the *Chronicle* does cover library-related news, the rising cost of library acquisitions, research efforts of the Library of Congress, and the status of

the National Periodicals Center.<sup>22</sup>

Two other predominantly higher education publications were listed, with approximately 5 percent of the respondents reading *Change*, and 5 percent reading *AAUP Bulletin* regularly. The omission of the leading research journal for higher education, the *Journal of Higher Education*, should be noted.<sup>23</sup> Where the leading research journals for academic librarianship are read frequently, the leading research journal for higher education was replaced by news-oriented publications for its field.

It is evident that journal reading as a professional activity of ACRL academic librarians has remained constant. The average number of journals regularly read remained the same from 1973 to 1978. Further, a comparison of the seventeen most frequently read titles showed great similarity as well: not only were they reading the same number on the average, but also the titles read and the percentages in which they were reading them were very similar. The three most frequently cited titles, *American Libraries*, *College & Research Libraries* and *Library Journal* accounted for more than one-third of all the journal reading activity.

There were differences, however, almost all of which can be attributed to two titles, *Journal of Academic Librarianship* and the *Chronicle of Higher Education*. A new title, *JAL*, was read by four in ten of the librarians in 1978. Also, the *Chronicle*, which was read by less than 5 percent of the respondents in the 1973 sample, increased its readership fourfold and was read by almost 20 percent of the respondents in 1978.

The displacement due to *JAL* is not difficult to explain. It is, after *C&RL*, the only other title specifically devoted to the broad field of academic librarianship. The increase exhibited by the *Chronicle* is not as straightforward. While other titles dealing with education did not show increase in readership from 1973 to 1978 (*Change*, *Today's Education*, *AAUP Bulletin*), the *Chronicle* increased by 15 percent.

It seems reasonable to assume that the *Chronicle's* increased readership was partially due to increased attention to the professional positions that it listed and its focus on the problems and prospects of higher education during a period of small growth and even real decline.

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WILLIAM J. MAHER

# Measurement and Analysis of Processing Costs in Academic Archives

*The timely processing of new acquisitions is essential to the successful management of academic archives and manuscript collections. Greater control of these activities may be accomplished through the measurement and analysis of processing costs. This paper proposes two procedures for costs studies and describes the results of such studies at the University of Illinois at Urbana-Champaign. It concludes with a description of processing efficiency measurements and suggestions for the application of study findings to program operations.*

THE PROCESSING of archival and manuscript collections is a central part of the operations of any college and university archives. Since processing accounts for a large share of personnel time, inefficiency in this area will adversely affect other aspects of academic archival programs. Success in reference service, preservation, appraisal, and full use of storage facilities all depend on the prompt and accurate processing of new collections. Because most academic archives face limitations on personnel resources, the ability to evaluate the efficiency with which they can process each new acquisition is in their interest. A clear understanding of staff resources required for processing will become even more important as increasing numbers of academic archivists face static or declining budgets.<sup>1</sup>

The efficiency of processing can be quantified, measured, and monitored through the use of cost analysis. While library literature provides several examples of cost analysis for acquisitions and cataloging of books, archivists have few examples relating to the processing of manuscript material.<sup>2</sup> This lacuna probably results from archivists' perception that while library operations are identical from institution to institution, archival pro-

cessing involves the handling of unique material. Thus, the argument runs, measurement and quantification would not be worthwhile, since levels and standards of processing are dictated by the nature of each collection. They would not, therefore, be subject to efficiency or "cost/benefit" guidelines. This line of reasoning fails, however, when one realizes that the activities involved in processing are actually quite similar for many collections at most institutions, even though each collection is unique. Therefore, an analysis of a representative sample of processing can produce average cost and time measurements which can be used as guidelines for future processing operations.

This paper will demonstrate the use of cost analysis to measure the efficiency of processing archival and manuscript collections at an academic archives. It will suggest two methodologies for conducting a processing cost study and describe the results of such studies at the University of Illinois at Urbana-Champaign. To illustrate the relationship between the allocation of staff resources and the productivity of processing, this paper will propose three ways to measure processing efficiency.

Any cost study must depend on the collection and analysis of statistics for all the activities involved in processing. Undoubtedly, this will consume some of the archival manager's

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William J. Maher is assistant university archivist, University of Illinois at Urbana-Champaign.

time, which could otherwise be devoted to appraisal, reference service, or more processing. However, analysis of processing is not only central to the archivist's administrative responsibilities, it also benefits the archival program in several areas. Information on the costs of and time spent processing records will help the archivist to establish guidelines to improve both the quality and quantity of processing; justify the budget and staff resources of the archives program; draft realistic grant proposals; and make better decisions about acquiring collections needing extensive processing. In academic archives where active collecting programs have resulted in the development of large backlogs of unprocessed material, a cost study may be the first step in eliminating the backlog.

Before proceeding, it is appropriate to define processing. "The Basic Glossary for Archivists and Manuscript Curators" (*American Archivist* 37:415-33 [July 1974]) describes processing as "the activities intended to facilitate the use of personal papers and manuscript collections generally comparable to arrangement, description, and preservation of archival material." This definition should be expanded to apply equally to official records as well as personal papers and manuscript collections. In its broadest sense, processing can include all procedures from the loading dock to final shelving and labeling of historical documents.

The complexity of these activities makes the measurement of processing costs quite difficult in any ongoing archival program. It is relatively easy to determine the cost of processing records handled as part of a grant project, since the project will have a defined budget and a readily discernible processing product at the completion of work. However, most college and university archives have no budget per se, and processing, records management, reference, and research functions are often performed by the same staff. In these situations, the archivist may determine processing costs by using one of two methodologies: retrospective analysis or direct measurement.

A retrospective study involves the analysis of annual report-type statistics to determine the volume of records processed and hours spent processing over a period covered by recent annual reports. This approach has been

suggested by Maynard Brichford in a paper at the 1976 annual meeting of the Society of American Archivists. I elaborated on this method in a 1978 article in the *Midwestern Archivist* (V.3, no.2:3-24 [1978]), finding that the cost of processing a cubic foot of records at the University of Illinois during 1976-77 was about \$19.

The retrospective methodology has two prerequisites. First, a repository must maintain statistics on the annual volume of records processed and the total hours spent by archives personnel. Second, there must be a clear perception of what percentage of staff time is devoted to processing as opposed to research, reference, records management, or administrative duties. Once this information is available, we can determine the total cost of time spent processing. This figure is then divided by the volume processed in a given period in order to obtain a cost per cubic foot.

Internal studies at the University of Illinois have shown that professional staff (1.5 FTE) spends 20 percent of its time, and clerical staff (1 FTE) 5 percent of its time, in processing-related activities.<sup>3</sup> The bulk of processing activity is performed by graduate student assistants and hourly student employees. The percentage of student time devoted to processing varies from year to year, but from July 1978 to June 1980 it averaged 63 percent for graduate students and 76 percent for undergraduates. During this same period of time, 1,115 cubic feet of records were processed. Staff resources devoted to this activity are illustrated in table 1.

The total labor cost of \$34,750.59 can be divided by the total volume processed (1,115) to arrive at a cost of \$31.17 per cubic foot. Since inflation and differences in hourly rates will limit the validity of this figure, it would be more useful to translate the cost into time to show that an average of 5.6 hours of labor were required for each cubic foot of processing.

Retrospective analysis of this type is both instructive and inexpensive if the appropriate statistics are available. The summary nature of this approach, however, permits only broad conclusions that must be used carefully. For example, precise costs for processing individual collections cannot be obtained because a retrospective analysis relies on estimates of the distribution of staff time. A po-

TABLE 1  
RETROSPECTIVE STUDY: MEASUREMENT OF PROCESSING  
COSTS FROM ANNUAL REPORT DATA, 1978-80

	Average Hourly Rate	Total Hours 1978-80	Percent Time Spent Processing	Hours Spent Processing	Cost of Processing
Professional staff (1.5 FTE)	\$12.80	5,424	20.0	1,084.8	\$13,885.44
Clerical (1.0 FTE)	6.80	3,808	5.0	190.4	1,294.72
Graduate students	4.38	5,379	63.0	3,388.8	14,842.94
Undergraduates	3.07	2,013	76.0	1,539.9	4,727.49
Total				6,203.9	\$34,750.59

tentially more serious limitation is that a retrospective analysis does not account for processing variations that result from differences in the type of record or level of processing.

Many of these problems can be avoided by using a second methodology, direct measurement, which can establish the exact costs of processing each of several "representative" collections. This method requires gathering data on staff hours, volume processed, volume weeded, and pages of finding aids produced for each collection processed over a period of months. Once the work on several record series and manuscript collections is measured carefully, the archivist will be able to calculate average processing times and costs to use as guidelines in program planning and management. The University of Illinois archives conducted such a study for a ten-month period in 1980. The results are described below.

It should be noted that this method also has its disadvantages. It has occasionally been difficult to encourage processors, typists, and supervisory personnel to record time spent processing. In addition, this processing study has taken time that could have been spent in other activities. Nevertheless, the usefulness of this survey in planning the allocation of staff resources more than compensates for the time spent. Since direct measurement analysis need not be done continuously, a one-year study should be more than adequate to provide a clear picture of processing activities.

The basic results of this study at the University of Illinois are contained in table 2.

These statistics, describing the processing of 309.2 cubic feet of records at the University of Illinois, reflect the nature of our holdings—administrative records and personal papers of an academic institution in the mid-twentieth century. They also are indica-

tive of the inexpensive labor force we use for processing—part-time graduate students. While our cost figures may differ markedly from those at other institutions, they do reflect a labor force readily available to many academic archivists.

For this study, the specific processing activities included are weeding of duplicates and nonarchival material, writing and typing of descriptive finding aids, arrangement where necessary, and minor physical rehabilitation (removal of paper clips and rubber bands and some refolding). Our finding aids include summary descriptions on five-by-eight-inch control cards for all collections. Supplementary finding aids list folder titles for many collections larger than one cubic foot. About 45 percent of official records and 55 percent of personal papers have supplementary finding aids that average about half a typed page per cubic foot.

Certain staff activities have been excluded from this study because they are difficult to measure or fall outside our general definition of processing. These items include appraisal, records scheduling, boxing and shipping of records, and entry of descriptive coding data into an online automated system. The time spent by our civil service employee supervising typists is also not included.

Supplies are not included in this list because they generally account for only a small part of overall processing costs. In fact, supply costs are the easiest aspect of cost analysis for any repository to conduct. Table 3 details the cost of supplies used for the present study.

To a large extent, the data on processing staff time (table 2) are self-explanatory. They illustrate the total volume of records processed, time spent, and cost of staff. However, to be helpful in program planning and supervision of staff, there must be a way to use this data to develop measurements of processors' productivity and efficiency. The

TABLE 2  
DIRECT MEASUREMENT STUDY  
PROCESSING COSTS, MARCH-DECEMBER 1980

Type of Record	Series*	Products		PP. Finding Aid	Proc. Prod. Units†	Staff Resources: Time and Costs			Total Hours/ Cost	Per Cu. Ft. Proc.	Unit Costs/Hours	
		Vol. Proc.	Vol. Weeded			Student Processors (\$3.75/hr)	Student Typing (\$3.20/hr)	Professional (\$12.80/hr)			Per Cu. Ft. Proc. & Weeded	Per Proc. Product Units†
Office records	60	273.2	52.8	219	457.5	824.5 hrs \$3,091.88	106.35 hrs \$340.32	35.25 hrs \$451.20	966.1 hrs \$3,883.40	3.5 hrs \$14.21	3.0 hrs \$11.91	2.1 hrs \$8.49
Personal papers	16	32.6	13.9	38	70.0	259.15 hrs \$971.81	23.25 hrs \$74.40	36.75 hrs \$470.40	319.15 hrs \$1,1516.61	9.8 hrs \$46.52	6.9 hrs \$32.62	4.6 hrs \$21.67
Publications	15	3.4	6.9	3	13.8	10.5 hrs \$39.38	2.5 hrs \$8.00	6.0 hrs \$76.80	19.0 hrs \$124.18	5.6 hrs \$36.52	1.8 hrs \$12.06	1.4 hrs \$9.00
Totals	91	309.2	73.6	260	541.3	1,094.15 hrs \$4,103.07	132.1 hrs \$422.72	78.0 hrs \$998.40	1,304.25 hrs \$5,524.19	4.2 hrs \$17.87	3.4 hrs \$14.43	2.4 hrs \$10.21

\*Of the series listed here, 34 (16 official records, 7 personal papers, and 11 publications) were additions to existing series requiring no rewriting of control cards.

†Processing product units are equal to the total volume processed and weeded plus one-half unit for each page of finding aid or each control card written.

TABLE 3  
SUPPLY COSTS, MARCH-DECEMBER, 1980

Type of Record	Number of Series	Volume* (Cu. Ft.)	Document Letter		Boxes† Document Legal		Records Center		Aver. per Cu. Ft.	Folders†		Total Cost of Supplies	Average Cost per Cu. Ft.
			No.	Cost	No.	Cost	No.	Cost		No.	Cost		
Office Records	60	273.2	134	\$171.52	2	\$2.72	223	\$127.11	4.5	1,229	\$115.53	\$416.88	\$1.53
Personal Papers	16	32.6	26	\$ 33.28	1	\$1.36	24	\$ 13.68	15.3	499	\$ 46.91	\$ 95.23	\$2.92
Publications	15	3.4	8	\$ 10.24	1	\$1.36	0	0	1.2	4	\$ .38	\$ 11.98	\$3.52
Totals	91	309.2	168	\$215.04	4	\$5.44	247	\$140.79	5.6	1,732	\$162.82	\$524.09	\$1.69

\*The total capacity of the boxes used in about 4 cubic feet less than the total volume processed. This is because some of the material processed as additions to existing collections was placed in the same boxes as previously processed material.

†Document boxes used are from Hollinger Corporation: letter size (.3 cu. ft.) at \$1.28 each; legal size (.4 cu. ft.) at \$1.36 each (1979). Record center boxes hold 1.0 cubic foot, and were purchased from Eastex Mfg. in Madison, Wisconsin, in 1980 for 57 cents each. Folders were purchased from Hollinger Corporation in 1979 for 9.4 cents each.



table lists three such measurements.

The first measurement, cost per cubic foot processed, is obtained by dividing the cost (or hours) of processing by the final volume of the processed collection. This results in an average of \$17.87 (or 4.2 hours) per cubic foot. Archivists can use this measurement to compare costs of processing different types of records. In the present study, for example, processing personal papers costs three times more than processing official records.

This formula, however, cannot provide a complete measure of productivity, because it does not account for the volume of duplicate and nonarchival material weeded in the course of processing. Therefore, a second type of unit cost should be calculated by dividing the cost (or time) of processing by the total volume processed and weeded (i.e., the original volume of the unprocessed material). In the present sample, this averaged \$14.34 (or 3.4 hours) per cubic foot. By accounting for the reduction in volume through weeding, the archivist can obtain a more realistic measure of productivity since weeding, even though it requires considerable time, also benefits archival programs through a savings of storage space.

Because these two measures do not acknowledge the significant amount of time devoted to description, table 2 contains a third measurement of efficiency—the cost (and time) per processing product unit. This is derived from the volume processed and weeded as well as from the writing of control cards and finding aids. On the basis of a study of a sample group of series at the University of Illinois, it was determined that the time required for producing one page of a finding aid or one control card was 1.7 hours, whereas the time spent to produce one cubic foot of processing or weeding was 3.1 hours. For the purposes of rough comparison, the figures were rounded so that one processing product unit could be assigned to each cubic foot processed or weeded, and one-half unit could be assigned to each control card or finding-aid page written.

Once the processing product units for a series have been calculated, their total can be divided into the cost (or time) of processing to determine the cost or time required for each of the processing products. In the current study, the cost per product unit averaged

\$10.21 (or 2.4 hours) per product unit.

The cost per product unit permits the evaluation of the major output of processors and compensates for discrepancies in cost figures that can occur if a great deal of time is spent on detailed finding aids. Archivists, however, should be cautious about broadly adopting the actual measurement described above, since the assignment of the unit values in this paper is based on a relatively narrow sample. Each institution must determine its own unit values based on its own processing standards. It should also be remembered that most processors perform several functions simultaneously, thus it is not always possible to separate clearly the time spent describing from the time spent arranging or rehabilitating files. Within these limits, however, the cost per processing product unit approach permits useful comparisons to determine the efficiency of processing staff.

Several conclusions are evident from the data presented in table 2. The fact that official records take less time to process than personal papers is not surprising since official records generally arrive in the archives in reasonably good order with clearly marked folder labels, whereas personal papers are frequently disorganized and contain items not in folders or in unmarked folders. Moreover, personal papers frequently contain documents on disparate subjects and therefore require more time for description.

These data also show that the processing of university publications is expensive and time-consuming if the final processed volume alone is considered. This is because such processing involves sorting the printed matter according to office of origin, identifying the record series to which the given item belongs, weeding duplicates, filing the item, and making changes in control cards and boxes when necessary. In most cases, such processing is not necessary to write finding aids or new control cards for publications. The large amount of time spent, however, should be seen in light of the amount of space saved through weeding and the access provided through description. In this case, the value of using the cost per processing product unit measurement, instead of the cost per cubic foot measurement, is evident.

At this point, it is appropriate to compare the results of the retrospective analysis (table

1) to the direct measurement study (table 2). While there is a discrepancy between the two studies regarding time required for processing a cubic foot (4.2 hours for the direct measurement and 5.6 hours for the retrospective analysis), the difference of 1.4 hours per cubic foot is not excessive. The discrepancy is mainly the result of processing a higher ratio of official records (which require less time) during the direct measurement than during the retrospective analysis. During the direct measurement study, the ratio was 88.4 percent official records, 10.5 percent personal papers, and 1.1 percent publications. During the two years covered by the retrospective study, the ratio was 64.2 percent official records, 30.2 percent personal papers, and 5.6 percent publications. This predominance of office records explains why the direct measurement study resulted in a lower average processing time than did the retrospective study.

While the sample used for the direct measurement study is less representative of the archives' holdings of different types of records, this study's findings are more useful because they differentiate processing activities by type of record. The most useful data in table 2 are those that reflect the average time for processing, weeding, and describing each of the three different types of records. This information permits the development of more precise guidelines to schedule and supervise staff. In fact, if series-by-series data are retained, they can be a reference point when assigning staff to process new collections that appear similar to those done during the direct measurement study.

Another way in which the direct measurement study can improve control of processing operations is the use of its findings on distribution of time by type of staff and activity. This information can assist the archivist in allocating personnel resources and developing realistic schedules. For example, table 2 illustrates that the largest amount of processing time at the University of Illinois was that of student employees (about 94 percent). Thus a large share of processing was being performed by a relatively inexpensive labor force.

To obtain a more precise view of the distribution of processing time and costs, a sample of thirty-two record series was analyzed in

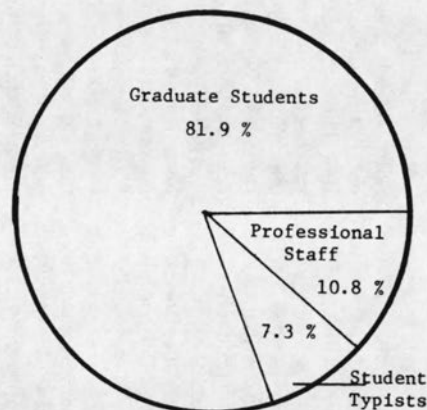
closer detail. This sample is based on those series for which it was possible to obtain separate statistics on basic components of processing—arrangement, description, and preservation. These thirty-two series (thirty office records, one personal papers, and one publication) had a processed volume of 71 cubic feet, a weeded volume of 17.4 cubic feet, 95 finding aid pages, and 28 new control cards, for a total of 149.9 processing product units. For purposes of comparisons, the total processing cost was \$1,953, or \$27.51 per cubic foot processed, or \$22.09 per cubic foot processed and weeded, or \$13.03 per processing product unit. This translates into a total of 487.5 hours (6.9 hours per cubic foot processed, 5.5 hours per cubic foot processed and weeded, or 3.3 hours per processing product unit). Figure 1 shows the distribution of staff time and activities for these series.

In this sample, professional staff accounted for a smaller part of the processing costs (only 10.8 percent) than in the overall study (18.1 percent). The breakdown of supervisory time (figure 1, B) is interesting—the greatest amount of time (58.3 percent) was spent in determining provenance and assigning the proper series number to each group of records. Description also required a substantial portion of supervisory time because concise descriptions of record series were necessary to simplify research access. The remaining portion of supervisory time was spent advising processors on problems of internal arrangement, level of description, and identification of documents.

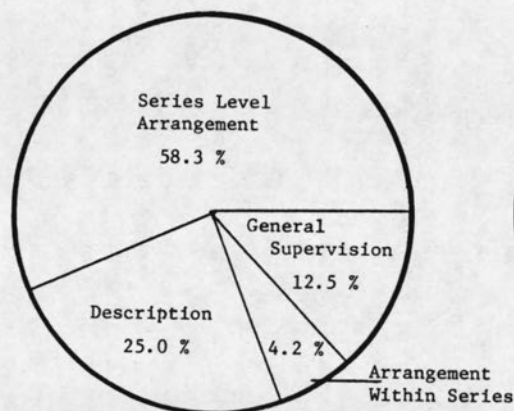
Figure 1, C shows that, for this sample, description was the single most time-consuming activity involved in processing. Arrangement, weeding, and rehabilitation each occupied equal amounts of time. Internal arrangement is frequently necessary even for well-structured office records because of office staff and physical-plant personnel often disturb the original order when transferring files from cabinets to boxes. Weeding and rehabilitation include the removal of paper clips, rubber bands, and other harmful substances, and the replacement of some folders. At the University of Illinois, it does not include extensive treatment of documents, e.g., deacidification, lamination, or encapsulation.

It is unlikely that the percentages shown in

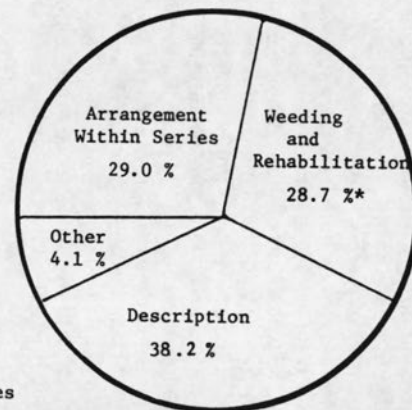
A  
Processing Costs  
(by Type of Staff)



B  
Supervision  
(by Type of Activity  
of Professional Staff)



C  
Processing Time—Professional  
and Graduate Student Staff  
(by Type of Activity)



\*Weeding and rehabilitation includes removal of paper clips, rubber bands, and other harmful substances, and replacement of some folders. It does not include extensive treatment of documents such as deacidification or encapsulation.

Fig. 1  
Distribution of Costs, Staff Time, and Activities

these pie graphs will correspond directly to figures for processing at other institutions. In addition, any statistical summary of processing time and costs cannot do justice to the wide variation from series to series. These variations occur because of the physical condition and arrangement of the records; the skill, experience, and speed of the processor; and the research value of the material. For example, a well-arranged alphabetical subject file can be processed quite quickly by an experienced staff member, whereas a collection of faculty papers with unlabeled folders documenting several subjects will require considerably more time even if processed by an experienced professional.

The experience and education of the individual processor is, then, most important. For example, an anthropology graduate student is likely to be a more efficient processor for personal papers of anthropologists than an engineering student (provided the student does not become too absorbed in the material and read every document). Indeed, this survey found that processors with the longest tenure were generally the most efficient and best workers. Ideally, all processing should be performed by the professional staff because the speed and quality of its work are higher. This compensates for their much higher hourly wage. However, most academic archives do not have enough professional staff members to do all of the processing. The use of graduate and undergraduate students for processing, therefore, represents a realistic alternative to developing large backlogs of unprocessed material.

Most archivists will not be surprised by these conclusions and they might, therefore, question the value of doing such a detailed study of processing costs. Indeed, many of the findings of this University of Illinois study may have merely confirmed the assumptions that have guided our work in the past. Nevertheless, the study has provided a quantitative basis on which to analyze the productivity of staff members. Most important, it has suggested a way to arrive at average processing time figures so that we can establish realistic criteria for the performance of our work.

Practical application of these studies covers a broad range of archival work from appraisal to reference access. However, it would be inadvisable to use processing statis-

tics as the sole basis for administering a program. To determine the level of description or collecting scope primarily on cost/benefit considerations would be an inappropriate use of this study. Rather, the results of processing cost studies can provide background for many important administrative decisions. For example, time and cost estimates can provide a statistical basis for scheduling transfers of records and solicitations of faculty papers or manuscript collections so that processing backlogs are kept to a minimum. If processing-time estimates show that a prospective acquisition would strain the archives resources, these same data can be used to develop proposals for more staffing. Knowledge of processing time and costs can guide the archivist in determining the length and types of finding aids to provide access to collections without overburdening the staff. Finally, the results of cost studies can lay the foundation for further research into methods for improving the productivity and quality of processing, such as dividing large collections between several processors or having some processors specialize in arrangement and others in description.

Many archivists may be skeptical of the value of cost studies in general. This analysis of processing at the University of Illinois is presented in full realization that each record series or manuscript collection is unique and that each processor has distinctive work habits. Each repository has different standards for processing, and the research possibilities of each collection can dictate vastly different levels of processing. For this reason each institution should develop its own data for use in the models presented above.

It is hoped that this study will serve as a catalyst for similar studies at other universities. The fact that Illinois' results of \$17.87 per cubic foot contrast sharply with those cited elsewhere illustrates the need for more studies so we can determine what factors cause such variations.<sup>4</sup>

The inherent diversity of the archival profession helps explain the differences in processing costs from one institution to another. Variations also result from most archivists' individualistic approach to reporting data in that variations in the types of statistics used will result in differences in processing statistics at each institution. Therefore, a crucial



step for further research will be the development of greater uniformity in reporting statistics. The recently appointed Society of American Archivists' Task Force on Standard Reporting Practices should be a step in this direction. Archivists should not, however, wait for the task force's final report before proceeding with analysis of processing costs.

Archivists who have maintained statistics on processing activities for several years are in an excellent position to begin retrospective studies immediately. Others may prefer direct measurement studies, which require collection of data for only a limited time period. College and university archivists should not

hesitate to use these techniques to determine the efficiency of their programs. The small amount of time required for these studies will be well spent because they can lead to improvements in the quality and quantity of work. Archivists will then be in a better position to plan for the future and prepare for the consequences of declining, static, or expanding budgets. Moreover, techniques developed in these studies may provide models for financial analyses of many archival activities, such as preservation or reference. These self-studies are necessary if archivists wish to improve administrative control of their programs.

#### REFERENCES

1. An earlier study of processing costs was discussed in a speech at the 1980 annual meeting of the Society of American Archivists. A transcript of the speech is available from the SAA as part of its Problems in Archives Kit 4, "Archival Processing Costs."
2. For example: Anton R. Pierce, Joe K. Taylor, "A Model for Cost Comparison of an Automated Cataloging System," *Journal of Library Automation* 11:6-23 (March 1978); Dennis R. Elchesen, "A Cost Effectiveness Comparison of Manual and On-line Retrospective Bibliographic Searching," *American Society for Information Science Journal* 29:56-66 (March 1978). The January 1972 issue of *Library Quarterly* contained several articles on "operations research" and its application to library activities. One of these articles, "Library Objectives and Performance Measures and Their Use in Decision Making" (p.107-28), suggested that statistical analysis of library operations should be connected to a calculation of cost/benefit ratios. One of the few examples in archival literature of an awareness of the necessity for cost
- analysis may be found in Michael Cook's *Archives Administration* (Folkstone, Kent: Wm. Dawson and Sons, 1977). W. N. Davis' "Budgeting for Archival Processing," *American Archivist* 43:209-11 (Spring 1978), reports on a processing cost study performed at the California State Archives. However, it provides little insight into the methodology or purpose of the study.
3. William J. Maher, "The Importance of Financial Analysis of Archival Programs," *Midwestern Archivist* 3, no.2:8 (1978).
4. A study conducted in New Zealand by Thomas Wilsted, for example, showed a cost of U.S. \$49 per cubic foot to process manuscripts collections at the Alexander Turnbull Library. (Wilsted's findings were N.Z. \$132 per linear meter. This was converted, for comparison's sake, to 2.6 cubic feet per linear meter, and N.Z. \$1 equaled about U.S. \$.96 at the time of his study.) Thomas Wilsted, "Scoring Archival Goals" in Andrew Lemon, ed., *Archives Conference Proceedings 1977* (Australian Society of Archivists, 1978), p.19-29.

## Selected Reference Books of 1980-81

**T**HIS ARTICLE continues the semiannual series originally edited by Constance M. Winchell. Although it appears under a by-line, the list is a project of the reference departments of Columbia University's Butler and Lehman libraries, and notes are signed with the initials of the individual staff members.<sup>1</sup>

Since the purpose of the list is to present a selection of recent scholarly and general works of interest to reference workers in university libraries, it does not pretend to be either well balanced or comprehensive. A brief roundup of new editions of standard works, continuations, and supplements is presented at the end of the article. Code numbers (such as AE213, CJ34) have been used to refer to titles in the *Guide to Reference Books* and its supplement.<sup>2</sup>

### ARCHIVES & MANUSCRIPTS

Grimsted, Patricia Kennedy. *Archives and Manuscript Repositories in the USSR, Estonia, Latvia, Lithuania, and Belorussia*. Princeton, N.J., Princeton Univ. Pr., [1981]. 929p. (Studies of the Russian Institute, Columbia University; Harvard Ukrainian Series) \$40. LC 79-15427. ISBN 0-691-05279-4.

Like the author's *Archives and Manuscript Repositories in the USSR, Moscow and Leningrad* and its *Bibliographical Addenda* (1972-76; *Guide* AB117, *Suppl.* AB29), this monumental compilation is designed as a starting point for the scholar planning a research trip: it provides a mass of valuable information on the development and organization, as well as on the holdings and published finding aids of 71 repositories—state

and city archives, archival collections in libraries, academies, museums, institutes—in the Baltic states and Belorussia.

In sections lettered *H* to *M* (continuing the A-G sequence of the Moscow-Leningrad volume) the work offers first a chapter on general archival bibliography and reference aids applicable for the whole region, then a section on each of the republics included. Each chapter is introduced by a historical survey of archives, and is followed by a general bibliography of archival reference aids and a directory of repositories, for each of which is given a survey of holdings and lists of published general descriptions, specialized descriptions, and catalogs. Entries, models of bibliographical description, are followed by translated title and a summary of contents. Valuable appendixes cover access and working conditions; geographical names; charts and maps of administrative territorial divisions; archival terms; and a preliminary bibliography of descriptions of relevant archival collections outside the USSR. There is an author-title index. Most of the finding aids described are available on microfiche.—R.K.

U.S. Library of Congress. Manuscript Division. *Members of Congress: A Checklist of Their Papers in the Manuscript Division, Library of Congress*. Comp. by John J. McDonough. Washington, Library of Congress, 1980. 217p. il. \$9. LC 78-606102. ISBN 0-8444-0272-9.

The personal papers of some 894 senators and representatives—plus delegates to the Continental Congress—are listed in this work; it brings together the Library of Congress' manuscript holdings of those who have served in Congress during all periods of the country's history right down to the 95th Congress. Representatives from nearly all of the states are accounted for among the 1,109 alphabetically arranged entries.

Each entry gives brief data on the person

1. Paul Cohen, Rita Keckeissen, Anita Lowry, Eileen McIlvaine, Mary Ann Miller; Lehman Library: Laura Binkowski, Diane Goon.

2. Eugene P. Sheehy, *Guide to Reference Books* (9th ed.; Chicago: American Library Assn., 1976); *Supplement* (Chicago: American Library Assn., 1980).

and then a short description of the kinds of manuscripts held. For a few, there is nothing more than an autograph; frequently a particular collection has only a single item or a few letters. For some, however, there are extensive holdings: Henry J. Allen's papers require 214 containers, even though he was a senator from Kansas for only two years; Daniel P. Moynihan's still-growing collection already contains 425,000 items. The checklist also includes references to microforms held by the Library of Congress of manuscript collections at other institutions. Two appendices provide guides to the members of Congress themselves: one is a listing by state of those represented in the collection; the other is arranged by the Congresses in which they served. — P.C.

#### BIOGRAPHY

*Makers of Modern Culture.* Ed. by Justin Wintle. London, Routledge & Kegan Paul; New York, Facts on File, [1981]. 605p. £12.50; \$34.95. LC 80-20199. ISBN 0-87196-493-7.

Arranged as a biographical dictionary, this is an attempt to treat modern culture through its originating individuals and their ideas. Figures included are "people who have initiated cultural change in the period covered [i.e., from about 1914], whose names occur most frequently in the critical press, and whose achievements seem the most significant." — *Introd.* The more than 500 signed sketches follow no set pattern, but concentrate on the biographee's innovative ideas, achievements ("not always positive"), and influence on successors in the person's own or related fields. Inevitably, the selection of names will not satisfy all users, but the range is unquestionably broad, covering philosophers, psychoanalysts, linguists, painters, composers, dramatists, novelists, poets, critics, film directors, anthropologists, sociologists, historians, etc. A brief bibliography is appended to each article; the "Index of Names and Key Terms" includes references to individuals mentioned in the text but not necessarily accorded a separate entry. Although this may not be an essential purchase, it does offer a fascinating collection of articles and should prove useful in both public and academic libraries. Browsers will love it. — E.S.

#### PHILOSOPHY

Stein, Gordon. *Freethought in the United Kingdom and the Commonwealth; A Descriptive Bibliography.* Westport, Conn., Greenwood Pr., [1981]. 193p. \$35. LC 80-1792. ISBN 0-313-20869-7.

The free-thought movement in England is defined as including "atheism, rationalism, secularism, deism, agnosticism" — ideologies of groups "in opposition to organized religion." — *Pref.* Stein points out that since the movement's organizations were primarily interested in education and propaganda, he can best present its history by describing the publications of those organizations. He has tried to exclude publications that were purely political as opposed to those that were antireligious or free-thought. The work is arranged by historical periods (1624–1760, 1760–1860, 1860–1915, 1915 to the present), each with a narrative section followed by a bibliography of the publications cited. The essays are detailed and give much biographical information. A glossary of terms is very helpful and prevents repetition, but it might have been more usefully placed at the beginning of the volume instead of near the end.

Appendixes cover the free-thought movement in New Zealand, Australia, Canada, and India. Though very brief, this presentation is much the same as in the body of the text. Other appendixes indicate libraries with major holdings in this field, and a list of master's theses and dissertations. There are author, title, and subject indexes. — E.M.

#### RELIGION

Elliott, John M. *The Near East/Biblical Periodical Index* 1960/69 — . Naperville, Ill., NEBPI Pr., 1981– . Looseleaf. 1960/69: \$20.

A preliminary edition of this new periodical index was issued in 1976. The present compilation analyzes thirty-five journals (chiefly biblical and archaeological) that are published in Middle Eastern or Western countries, half of which are now covered by existing biblical or religious indexing or abstracting services. Arrangement is "topical and regional," using the geographical boundaries that existed between the two world wars — thus "Palestine" instead of "Israel," etc. Under each region or country, topics are

subdivided into sections for places, history, material culture, social studies, and language. Entries give bibliographical information and sometimes a short contents note. The "organizational outline" serves as a helpful detailed table of contents. There are indexes of place names and of subjects. The work should prove useful for readers who do not have access to the wider indexes, which it duplicates in part.

Publication plans call for a 1970-83 volume (to be interleaved with the present work), annual or biennial updates, and a retrospective volume for 1945-59. — R.K.

Walsh, Michael J. *Religious Bibliographies in Serial Literature: A Guide*. London, Mansell; Westport, Conn., Greenwood Pr., [1981]. 216p. \$39.95. LC 81-312. ISBN 0-313-22987-2.

Compiled on behalf of the Association of British Theological and Philosophical Libraries, this guide lists and describes some 178 serial sources—indexes, abstracting services, bibliographies of current literature published in scholarly journals—which provide bibliographic references on various aspects of religion. Works listed are those that include a separate religion section or a subject heading such as "Religion," "Theology," "Islam," etc., and that list at least a score of items annually. Numerous general, social science, and interdisciplinary sources have been included along with the more specialized ones for religion itself. Each entry is annotated at some length, with notes on arrangement, coverage, special features, and evaluative comment. Title and subject indexes complement the alphabetical arrangement of entries. The introduction to the volume offers an interesting overview of some of the problems and techniques of bibliographic searching in the field of religion and singles out various nonserial and related sources of particular usefulness in such searching. — E.S.

#### LITERATURE

*Historical Rhetoric: An Annotated Bibliography of Selected Sources in English*. Winifred Bryan Horner, ed. Boston, G. K. Hall, [1980]. 294p. \$35. LC 80-21947. ISBN 0-8161-8191-8.

Murphy, James Jerome. *Renaissance Rhetoric: A Short-title Catalogue of Works on Rhetorical Theory from the Beginning of Printing to A.D. 1700, with Special Attention to the Holdings of the Bodleian Library, Oxford*. New York, Garland, 1981. 353p. (Garland Reference Library of the Humanities, V.237) \$50. LC 80-8501. ISBN 0-8240-9487-5.

The first of these bibliographies is an "attempt to trace the tradition of rhetoric through its long history from ancient Greece to its evolution within the English-speaking world" by offering a long list of both primary and secondary works considered by the contributing scholars to be "the basic studies of rhetoric from all periods and from many disciplines." — *Gen. Introd.* Five sections, by as many specialists, cover the classical period, the Middle Ages, the Renaissance, the eighteenth and the nineteenth centuries. Each chapter has a short introductory survey and is divided into two lists: primary sources, arranged chronologically; and secondary works (both books and articles), listed alphabetically by author. Annotations, usually a paragraph in length, summarize contents or indicate a work's significance or point of view. The volume will be appreciated by students not only for its identification of primary works, but also for its indication of good English translations of Latin and Greek texts.

Murphy's compilation, on the other hand, is devoted to the Renaissance only (i.e., from ca. 1455 to 1700), and lists primary sources published in that period that "offer preceptive advice for the preparation and delivery of future discourse." — *Introd.* Its primary intent is "to identify authors and their works and to locate at least one copy available for further study." Not only Renaissance authors of both England and the Continent appear, but also those classical authors whose works were printed during the years covered. Works are listed alphabetically by author, then chronologically, with short title, place and date of publication and, in symbol, a location for each printing or edition. A select bibliography of secondary works concludes the volume. — R.K.

#### PERFORMING ARTS

*Variety International Showbusiness Reference*. Mike Kaplan, ed. New York, Gar-



land, 1981. 1135p. (Garland Reference Library of the Humanities, V.292) \$75. LC 81-2329. ISBN 0-8240-9341-0.

This volume brings together diverse facts and figures about "showbusiness"—movies, television, theater, recordings—drawn from the files of *Variety*. The information is essentially of three kinds: biography, credits lists, lists of award winners or top money-makers. The biographical section is particularly useful for its notes on people associated with the business or technical aspects of the entertainment industry, as well as on directors, producers, and performers. The lists of film credits (U.S. and foreign), TV credits, Broadway play credits, overseas play credits (mostly British and Australian) cover only January 1, 1976, to December 31, 1980, but provide a substantial amount of information, including the date of a review or notice in *Variety*; since that periodical's reporting is quite extensive in its coverage, these lists are valuable sources of information not only on the best-known films, plays, or television shows, but also on many lesser-known works. As befits a reference source dedicated to the entertainment industry, there are a number of "blockbuster" lists, including the winners of Oscars, Emmys, Tonys, Pulitzer Prizes (for plays), and Grammys, not to mention the hits whose popularity can be measured by the number of people who have watched, attended, or bought them: "100 All-Time Rental Champs," "Top 50 Nielsen-Rated TV Shows," "55 Longest-Running Broadway Plays," and "Platinum Records." A necrology for 1976-80 and a directory of festivals, markets, and conventions complete the volume. —A.L.

Welch, Jeffrey Egan. *Literature and Film: An Annotated Bibliography, 1909-1977*. New York, Garland, 1981. 315p. (Garland Reference Library of the Humanities, V.241) \$40. LC 80-8509. ISBN 0-8240-9478-6.

Ever since the early days of the movies, the relationship between film and literature has been much considered and debated. The development of the terms of that debate—e.g., the pros and cons and complexities of adaptation, the comparison of film and literature as narrative arts, or of film and theater as dramatic arts—is chronicled by this bibliography in a year-by-year arrangement of

English-language books, articles, and dissertations. It is a selective, well-annotated listing of substantive, critical sources; the majority of cited sources were published in the last fifteen years, and the excellence of this bibliography can only make one regret that 1977 is the closing date of its coverage. There is an appendix listing literary authors with brief information on film adaptations of their works, as taken from the sources cited in the bibliography. (Both the appendix and the index should be consulted to locate all references to a literary author.) A very good name/title/subject index adds to the bibliography's usefulness for the many students and scholars who are interested in some aspect of the relations between film and literature. —A.L.

#### EDUCATION

Weinberg, Meyer. *The Education of Poor and Minority Children: A World Bibliography*. Westport, Conn., Greenwood Pr., 1981. 2v. \$95. LC 80-29441. ISBN 0-313-21996-6.

"The subject matter of this work is schooling as it is affected by the social, economic and political forces revolving around it." —*Pref.* The scope of the bibliography is worldwide, but only a quarter of the 40,000 entries refer to studies of areas outside the United States. The introduction presents a brief survey of educational research up to now, pointing out its vagaries, biases, and gaps, and offers this bibliography as an indicator of the new and more urgent directions the research should be taking. One of the author's aims was to list as many as possible of the "non-establishment" sources of information that contain the minorities' views or which are generally overlooked: investigative journalistic reporting, the black press, black journals in education and the social sciences, legal proceedings, government documents (especially hearings), and references to boycotts, lawsuits, and lobbying.

Although the bibliography is massive and there is an author index, retrieving citations on a particular subject may be difficult owing to the lack of a subject index and because some very general categories appear in the table of contents (e.g., "The American Scene" or "Social Conditions"). In the category "History—Study and Teaching," there

are only twenty-two entries concerning the way history is taught in U.S. schools, a doubtful few. Even with its shortcomings, however, this is an admirable work, which could only have been created with great effort and selflessness. — M.A.M.

#### WOMEN'S STUDIES

Barrow, Margaret. *Women 1870–1928: A Select Guide to Printed and Archival Sources in the United Kingdom*. London, Mansell, 1981. 249p. £17.50. ISBN 0-8240-9450-6.

This is one of those well-realized reference books that manages to create a palpable sense of the time, place, and events on which it focuses. Partly responsible for this is the thoughtful introductory matter explaining the background, dates, and subjects of coverage. 1870 was the year the "Married Women's Property Acts" were passed, marking the beginning of the decade in which British women achieved major steps toward equality; and the 1914–28 period is one that has been neglected by women's studies, even though it was a time of conflict and struggle because the opportunities afforded women out of necessity during the war were in danger of being rescinded in peacetime. But the entries and their annotations tell the story best. They represent minutes of meetings, legislation, pamphlets, diaries, oral histories, etc. — the documents reflecting the social and economic affairs of British women in this period. Included are all the issues, campaigns, and movements women were involved in or that affected them, whether or not suffrage per se was being addressed. Women in literature and the arts, and the interpretation of their lives in literature, are not covered.

The book is in four parts: archives; printed works; nonbook material; and libraries and record offices. No attempt is made to offer a comprehensive listing in each section, but the selections indicate the scope of material available. Each part has its own introduction and detailed table of contents, and there are subject, author, and selected title indexes. — M.A.M.

#### POLITICAL SCIENCE

DeLancey, Mark W. *African International Relations: An Annotated Bibliography*.

Boulder, Colo., Westview Pr., 1981. 365p. \$27.75. LC 80-21254. ISBN 0-89158-680-6.

This work contains references to books, parts of books, journal articles, reviews, and pamphlets on all aspects of African foreign affairs; documents and ephemera are not included. Although there are no stated limitations on the languages of the items selected for inclusion, the majority of the 2,840 entries are in English. Coverage is thorough from 1960 through 1978, with some listings as current as 1980. Citations (accompanied by brief descriptive annotations) are arranged alphabetically by author in eleven broad subject categories, including chapters on the foreign policies of individual African states, inter-African conflicts, subcontinental regionalism, African unity, the United Nations and international law, southern Africa, Africa and the rest of the world, and an important section on the economic factors of African international relations. Countries of sub-Saharan Africa are better represented than those of North Africa, and southern Africa receives the most exhaustive treatment of all. The detailed subject index of topics, place-names, and persons facilitates access; however, one regrets the absence of an author index. An added feature is the eight-page list of abbreviations and acronyms commonly used in African international affairs. This is a valuable addition to the already impressive list of information sources available to scholars and students of Africana. — L.B.

Shoup, Paul. *The East European and Soviet Data Handbook: Political, Social, and Developmental Indicators, 1945–1975*. New York, Columbia Univ. Pr., 1981. 472p. tables. \$40. LC 80-25682. ISBN 0-281-04252-3.

What was the rural infant mortality rate in Poland in 1946? In 1966, how many housewives were members of the Soviet Communist Party? What was the decrease in the Gypsy population of Romania between 1930 and 1977? The answers to these and thousands of other questions involving basic social-science data are found in this fine handbook, the first to present data for all the Communist countries of Eastern Europe and the Soviet Union.

Since one of the compiler's major objectives was "to give an overview of social

change and elite development in Eastern Europe and the Soviet Union since World War II, with the data presented in such a way as to facilitate comparisons" (*Gen. Introd.*), tables are grouped by subject in eight main sections: (1) population; (2) party membership; (3) national and religious affiliation; (4) educational attainment; (5) classes; (6) party leaders; (7) occupations; (8) developmental indicators and the standard of living. Uniform criteria have been used as far as possible. Each section consists of a brief introduction followed by fifteen to thirty-seven tables, with explanatory notes; sources for individual tables are identified. With the exception of national income data, economic statistics have been excluded, since they are available elsewhere; emphasis is on subjects that have been inadequately covered in other sources, such as party membership, social classes, occupations, levels of educational attainment, and backgrounds of party leaders.

Appendixes provide useful data on dates of censuses and party congresses, and the guidelines and classifications used by various countries in defining educational levels, economically active populations, etc. The lengthy introductory essay on the availability and reliability of Soviet and East European statistics (p.1-35) and the extensive bibliography (p.455-66) are clear indications of the careful and diligent scholarship involved in the compilation of this volume. It is recommended as an essential purchase. — D.G.

Smith, Harold. *The British Labour Movement to 1970: A Bibliography*. [London], Mansell, [1981]. [250]p. £30. LC 81-670087. ISBN 0-7201-0924-8.

Smith has identified almost 4,000 books, essays, pamphlets, and periodical articles published between 1945 and 1970, which discuss the British labor movement of any period. These he has assembled into an extremely useful bibliography for any researcher of British history and politics. The work is oriented toward broad topics or periods such as "Early Radicalism" or "Labour Governments, 1929-1931," rather than toward specific issues such as the workweek or child labor. The "General" section has some very helpful subdivisions: "Autobiographies, biographies, memoirs, obituaries" lists collective works and also cites studies (including DNB articles), autobiographies, and obituaries for individual names; "Sources for research, study and teaching" is a bit of a hodgepodge, but it does cite discussions of archival and library resources, state-of-the-art studies, and statistical compendiums. The list of bibliographies (p.xv-xviii) cites works published through 1978; these citations are not indexed, however, nor do sections of the main work refer to pertinent citations in this list. These comments are not meant as serious criticisms, but rather as cautions in using the book.

Two exclusions should be noted: books on industrial relations, because they are included in Bain and Woolven's *Bibliography of British Industrial Relations* (Cambridge Univ. Pr., 1979); and government publications that are listed in HMSO indexes. The index is primarily of names, but includes some subject headings. The compiler hopes to issue a supplement for 1971-80 in 1982 and, in due time, a second ten-year bibliography. We look forward to this continuing effort. — E.M.

#### HISTORY AND AREA STUDIES

Adams, Thomas Randolph. *The American Controversy: A Bibliographical Study of the British Pamphlets about the American Disputes, 1764-1783*. Providence, Brown Univ. Pr.; New York, Bibliographical Society of America, 1980. 2v. (1,102p.) \$60. LC 77-76348. ISBN 0-87057-150-8.

Between 1764 and 1783, more than 1,400 pamphlets were published in Great Britain discussing that country's American colony. Adams, already well known for his *American Independence: A Bibliographical Study of American Political Pamphlets* (Guide DB50), has now traced a parallel route in this study of controversial pamphlets showing the British side of the question. He has described each pamphlet in painstaking detail and identified American pamphlets later published in Great Britain, as well as American and Continental editions of works originating in England. In all, there are 2,300 entries with collations, appropriate bibliographical and historical information, references to appearances in contemporary advertising, bibliographical citations, and locations of copies in the United States.

Adams has also provided two useful appendixes. The one on "Pamphlet Exchanges"



makes it possible to follow a debate through several pamphlets: Richard Price's *Observations*, for example, inspired no less than thirty-two other pamphlets, and these are all cited, along with pamphlets disputing some of the responses. The other appendix lists publishers and the pamphlets issued from their presses. Separate title and subject indexes offer useful guides to this work, which was twenty years in progress and which will be of continuing importance to our understanding of the American Revolution. — P.C.

Boyce, Gray Cowan. *Literature of Medieval History 1930–1975: A Supplement to Louis John Paetow's A Guide to the Study of Medieval History*. Millwood, N.Y., Kraus International, 1981. 5v. \$495. LC 80-28773. ISBN 0-527-10462-0.

"Sponsored by the Medieval Academy of America." — t.p.

A revised edition of Paetow's *Guide* with errata and an addendum, published 1980, was previously noted in these pages. These new volumes, as the subtitle clearly states, form a supplement to Paetow's work (*Guide* DA108), not a new edition thereof. Moreover, while following the basic plan of Paetow, "the accent here is placed more on the needs of advanced students and scholars." — *Pref.* The resulting compilation is a fairly staggering international listing of book and periodical references. The time period for the "Medieval Culture" section has been extended to the year 1500 instead of ending at 1300; English history as such is still excluded except as systematically treated with events and developments on the Continent. Book-review citations follow many of the entries, and there are occasional evaluative comments or notes indicating content. There is an index of authors' names and personal names as subjects, but for topical subject access one must rely on the table of contents and the "List of Subject Headings" (p.xlix–civ), which details the chapter subheads and therefore offers mainly a topographical approach rather than an alphabetical one. — E.S.

Coletta, Paolo Enrico. *A Bibliography of American Naval History*. Annapolis, Naval Institute Pr., [1981]. 453p. \$16.95 pa-

per. LC 80-24864. ISBN 0-87021-105-6.

For this bibliography, American naval history is defined very broadly and includes diplomatic, political, economic, and social history as well as the history of the United States Navy, Marine Corps, and the Coast Guard for the period when it was part of the Navy Department. The range of publishing is correspondingly broad, with 4,822 articles, essays, books, theses, government publications, and oral history interviews represented. Only English-language works are cited; the cutoff date is December 31, 1979. Materials are arranged within a chronological framework subdivided by type of publication. Following an introductory section, "Selected Bibliographic Aids and Reference Works," the chapters cover "The European Heritage" through "Sea Power for the 1980s." The subject index is extremely helpful, but a little complicated. For example, there are no entries under specific naval battles or campaigns, but one finds them under the rubric "Battles, naval."

This work will not replace Myron Smith's volumes on the American navy in the various wars, of course, but it complements them with its more general, interdisciplinary approach. — E.M.

*The Encyclopedia of Ancient Civilizations.*

Arthur Cotterell, ed. New York, Mayflower Books, [1980]. 367p. il. \$29.95. LC 79-28366. ISBN 0-8317-2790-X.

The compiler has selected a group of some thirty-eight specialists to write on various peoples and their cultures in order "to provide a comprehensive view of ancient history through the study of its civilizations." — *Pref.* Thus we are given Ignacio Bernal writing on the Olmecs, Wendy O'Flaherty on Hinduism, Colin Renfrew on the emergence of civilization. Each section devoted to a particular early culture focuses on its "emergence, development, interaction, and decline." Obviously the period of coverage varies from area to area; for example, that on Egypt covers from 3000 B.C. to about A.D. 500, while the period for the Americas runs from about 1000 B.C. to A.D. 1000. The essays are brief (about six or seven pages in length), well written, and have good illustrations and frequently good maps. A surprising amount of



detail is presented, but this is still a volume for the general reader. A selected bibliography and an index conclude the work. — E.M.

*Research Guide to Andean History: Bolivia, Chile, Ecuador, and Peru.* John J. TePaske, coordinating ed. Durham, N.C., Duke Univ. Pr., 1981. 346p. \$18.75. LC 80-29365. ISBN 0-8223-0450-3.

A project of the Andean Studies Committee of the Conference on Latin American History, this guide comprises a collection of contributed articles (a few of them in Spanish), each of which describes an individual archive, a group of archives in a specific area, or repositories having materials relating to a particular historical period or topic (e.g., "El Archivo Mariscal Santa Cruz," "The Archives and Libraries of Guayaquil," "Sources for the Study of Chilean Labor History," "Research on Peruvian History: 1870-1930"). Articles are grouped by country. Inasmuch as the contributing editor for each country section was allowed to develop his own framework, there is considerable variation in the presentation of information, but the overall result should prove very valuable to the historian. As noted in the preface, not only are there descriptions of archival holdings and their organization, but one may find "listings of fresh topics for innovative research; practical suggestions for getting the most from one's research time in the field"; and names and addresses of archives and archivists. A subject index to complement the geographical index of archives would have been a welcome addition to this guide. — E.S.

Steiner, Dale R. *Historical Journals: A Handbook for Writers and Reviewers.* Santa Barbara, ABC-Clio, [1981]. 213p. LC 80-26215. ISBN 0-87436-312-8.

As the subtitle indicates, this is a guide for prospective contributors to historical journals, not a selection guide for the periodicals librarian. Like Gerstenberger and Hendrick's *Fourth Directory of Periodicals Publishing Articles on English and American Literature and Language* (Guide BD60), it offers an alphabetical list of journals, with directory information concerning each and a summary of the journal's policies and regulations regarding submission of manuscripts for

articles and book reviews. Uniform presentation of the information makes for easy scanning, and a subject index groups journal titles by specialty or field of principal interest. Two brief introductory essays offer advice on preparing articles and on book reviewing for historical journals. — E.S.

#### NEW EDITIONS, SUPPLEMENTS, ETC.

*The Jamaican National Bibliography, 1964-1974* (Millwood, N.Y., Kraus International, 1981. 439p. \$95) prepared at the Institute of Jamaica, Kingston, supersedes the 1964-70 cumulation of the same title (1973; Suppl. AA132), adds 1963 Jamaican publications not previously covered, and includes works by Jamaicans published abroad as well as works about Jamaica published elsewhere. Arrangement is by broad subject category with an index of authors, editors, corporate bodies, and titles. There is a separate list of Jamaican periodicals and newspapers.

*Publishers' Trade List Annual Index 1903-1963* (Westport, Conn., Meckler Publishing, 1980. 142p. \$49.50) was prepared as a finding aid for Meckler's microfiche edition of *PTLA*, but it can also be used effectively at the reference desk or with the paper copy. That is, while its primary purpose is to indicate the fiche number (and position on the fiche) of the catalog of a given publisher for a given year, it also shows at a glance the years in which an individual publisher's offerings were included in *PTLA* and whether the listing is in the main alphabetical sequence or in the supplement.

The second edition of *The Library of Congress Main Reading Room Reference Collection Subject Catalog* (Washington, D.C., Library of Congress, 1980. 1,236p.; for sale by U.S. Govt. Print. Off. \$28) provides a subject approach to the 17,315 titles (13,385 monographs; 3,930 serials) that constituted the collection on August 15, 1980. Like the 1975 edition (Suppl. AA80), it is arranged by subject heading, then by main entry. Katherine Ann Gardner is again the editor.

*Book Review Index: A Master Cumulation 1969-1979* (Detroit, Gale, 1980. 7v. \$375) cumulates the approximately 960,000 review citations from the annual volumes of the index (*Guide* AA412) for the 1969-79 period.

Although a title index has been a feature of the annual volumes only from 1976, this cumulation provides title indexing for the full period.

Norman W. Schur's *English English* (Essex, Conn., Verbatim, 1980. 332p. \$24.95) is a revised and expanded edition of his *British Self-taught* (1973; Guide AD63). Like the earlier edition, this volume gives American equivalents of British terms and expressions, together with explanatory notes for many of the entries.

The long-awaited second volume of *The Cambridge Italian Dictionary* has finally appeared. Under the continued editorship of Barbara Reynolds, the English-Italian volume (Cambridge Univ. Pr., 1981. 843p. \$165) corresponds to the earlier part (Guide AD450) in that the material was "selected and arranged to the maximum advantage of the English-speaking user." — *Introd.* Americanisms are sparingly included; specialized vocabulary was selected "primarily with the aim of meeting the requirements of translators from English into Italian."

Equally welcome is the English-French portion of *Harrap's New Standard French and English Dictionary* by J. E. Mansion, as revised by R. P. L. Ledésert and Margaret Ledésert (London, Harrap, 1980. V.3-4. £35). This is a thorough reworking and updating of the portion of the dictionary that first appeared in 1939 (see Guide AD277 for the French-English part), with particular attention having been given to scientific, technical, and industrial development, as well as good representation of colloquial and idiomatic expressions.

*Serials in the British Library* (London, The British Library, June 1981— . Quarterly. £33 per year, overseas) is the successor to the quarterly *British Union Catalogue of Periodicals* (Guide AE147), which ceased with the cumulation for 1980. The new publication lists (and provides full cataloging information on) serial titles newly acquired by the British Library, together with locations, holdings, and additional titles reported by a small number of other British and Irish libraries "selected on account of their geographical location or the significance of their collections." — *Pref.* An annual cumulation will be available only on microfiche (£18 overseas).

The third and final volume of *The German Language Press of the Americas* (Guide AF18) by Karl J. R. Arndt and May E. Olson is entitled "German-American Press Research from the American Revolution to the Bicentennial" (München, K. G. Saur, 1980. 838p. DM240). It consists mainly of reprints of "research publications dealing with the German-American press that have long been out of print" (*Pref.*), plus some new contributions by the editors to the history of the German press in America.

Benjamin C. Nangle's *Gentleman's Magazine Biographical and Obituary Notices, 1781-1819* (N.Y., Garland, 1980. 422p. \$55) was originally prepared some forty years ago and maintained as a card file in the Yale University Library. Now published as volume 212 in the "Garland Reference Library of the Humanities," the work provides indexing for the period following the 1731-80 segment prepared by the Index Society (Guide AJ184). As in the earlier index, an identifying word or phrase is given with most names.

Beginning with the volume covering 1979, *The Romantic Movement: A Selective and Critical Bibliography* appears as a separately published volume rather than a supplement to the journal *English Language Notes* (see Guide BD18). Under the continued editorship of David V. Erdman, the 1979 volume (N.Y., Garland, 1980. 333p. \$35) forms volume 211 of the "Garland Reference Library of the Humanities" and future volumes are to be part of that series. Intended "to cover a 'movement' rather than a period," the various sections of the bibliography cover different time spans, with the English section now focusing on the 1789-1837 period. One hopes that an index will be added in later volumes.

*Bibliographies of Studies in Victorian Literature for the Ten Years 1965-1974*, edited by Ronald E. Freeman (N.Y., AMS Pr., 1981. 876p. \$37.50), reproduces the annual bibliographies for those years as published in the periodical *Victorian Studies* and adds a cumulated index, an errata list, and an introduction by Freeman. It continues the series of similar compilations with this title by Templeman, Wright, and Slack (Guide BD400-BD400b).

Plots, themes, and central theses of "the most important books of all types and genres published during the last thirty years" (*In-*

*trod.*) are summarized in *Thesaurus of Book Digests, 1950-1980* by Irving Weiss and Anne de la Vergne Weiss (N.Y., Crown, 1981. 531p. \$14.95). The work serves as a supplement to the 1949 compilation of similar title by Haydn and Fuller (*Guide BD54*).

*European Political Facts 1789-1848* by Chris Cook and John Paxton (London, Macmillan, 1981. 195p. £20) forms a chronological predecessor to the compilers' publications of similar title covering 1848-1918 (publ. 1978) and 1918-1973 (*Suppl. CJ34*). Like the earlier volumes, it offers lists, chronologies, statistical tables, etc., on the countries of Europe "from the Iberian kingdoms in the west

to the Tsarist and Ottoman empires of the east."—*Pref.*

With the appearance of volumes seven and eight, the *Dictionary of American Naval Fighting Ships* (Washington, D.C., Naval History Center, Dept. of the Navy, 1981. V.7-8. \$16, \$15) is now complete. In progress for more than twenty years (*see Guide CJ305*), the set provides descriptions and histories "of the almost 10,000 ships which have served the United States Navy and its forebear, the Continental Navy."—*Foreword*. A revised and updated edition of volume 1 is already being planned.—*E.S.*

# Research Notes

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JULIA F. BALDWIN AND ROBERT S. RUDOLPH

## Improving Student Recall of Library Information From Slide/Tape Programs

For library instruction, slide/tape programs offer several advantages. They are flexible, lending themselves to easy updating of information and correction of errors. They are suitable for point-of-use applications or for showing to class-size audiences. It is possible to get close-up shots of pages, individual index entries, and catalog cards as well as on-site shots and pictures of graphics. In addition, slide/tape programs are relatively simple to make, at least in comparison to videotape. The film "crew" can be a single person, thus minimizing problems of scheduling the filming and of disrupting normal library operations. The narrator does not have to memorize the script or use specially prepared prompter cards. This simplicity makes creating a slide/tape program relatively inexpensive.

However, as an instructional tool, the slide/tape program has the drawback of being an inherently static medium. The pictures do not move. There is no eye contact with the narrator. In a slide/tape setup, the presentation advances according to a predetermined pace, irrespective of the needs of particular audiences. In classroom showings, the lights are often turned off. As a result,

students' attention may wander and important points may not get across.

This article offers librarians a technique that improves the effectiveness of the slide/tape program as an instructional tool. The technique involves a kind of programmed instruction in which selected material is periodically reviewed in question-and-answer slides. Our findings from a year-long study demonstrate conclusively that this kind of interactive feature does improve immediate recall of library information.<sup>1</sup>

### TEST SAMPLE

Our findings are based on a sample of 569 students enrolled in a business-report-writing course during the 1978-79 academic year. An introduction to the library is a regular part of the course since students are required to write a library research paper. Our slide/tape program is designed to provide this introduction.

To assure a random sample, we used odd and even section numbers as a basis for placing students in the experimental (odd-numbered sections) or the control (even-numbered sections) group. This odd/even grouping eliminated bias due to variations in student alertness during different times of day since sections of the course are scheduled by odd/even pairs at the same hour but on different days. Differences in motivation and maturity between night- and day-school sec-

*Julia F. Baldwin is documents librarian, and Robert S. Rudolph is professor of English, the University of Toledo, Toledo, Ohio.*



tions were also thereby avoided. Bias due to differences in teachers' abilities was eliminated by having teachers exclude all library instruction from the course until students were able to see the slide/tape presentation. This sampling procedure produced 564 scorable answer sheets (268 in the experimental group and 296 in the control group).

#### TESTING PROCEDURE

Two versions of the presentation were created for the purpose of testing the effectiveness of the interactive feature. The experimental group (called *Q/A* in table 1 below) saw a version containing 12 additional slides (for a total of 102) and appropriate accompanying script raising and then answering questions about important bits of information. The question/answer feature was introduced at four important places—after presentations on books, periodicals, microfilm holdings, and government documents. Each question/answer period contained two or three questions. Each question or pair of questions was followed by an average 2.6-second pause and then slides and audio giving the answers. A total of ten questions and their answers were given. The control group (called *No Q/A* in table 1) saw a version of the presentation that lacked the interactive feature.

Since we were interested in the effect of this interactive feature on immediate recall, testing was done immediately after the presentation was seen. The testing was prefaced by a set of standardized instructions. Eight of the fourteen questions covered material included in the interactive feature.

#### FINDINGS

To determine the effectiveness of the interactive feature on improving immediate recall of library information, we ran three t-tests on student scores: one (*A* in table 1) on the scores for all questions; one (*B* in table 1) on scores for questions about just those points covered by the interactive feature; one (*C* in table 1) on scores for questions about points not included in the interactive feature. Table 1 presents the results of these three t-tests.

The favorable impact of the interactive feature on immediate recall is dramatized by comparing the results of t-tests *B* and *C*. The t-test *C* value of 1.35 shows no significant difference between the scores of both groups

TABLE 1  
COMPARATIVE RESULTS OF T-TESTS

	t-test A	t-test B	t-test C
<i>Q/A</i> Group*			
N	268	268	268
Mean	9.91	6.26	2.74
S.D.	2.57	1.62	1.22
<i>No Q/A</i> Group†			
N	296	296	296
Mean	8.42	5.14	2.61
S.D.	2.77	1.79	1.20
t-test value (df = 562)	6.60**	7.83**	1.35

\**Q/A* Group's slide/tape presentation contained the interactive feature.

†*No Q/A* Group's slide/tape presentation lacked the interactive feature.

\*\* $p > .05$

for questions on material not covered by the interactive feature. The t-test *B* value of 7.83, on the other hand, shows that for questions on material included in the interactive feature, the experimental group's recall was far superior to the control group's. This finding would be statistically significant even at the .0005 level of probability (critical value—3.29).

#### CONCLUSIONS

This study shows that material reviewed in an interactive feature improves immediate recall of library information presented in a slide/tape program. Two factors may account for this result: the greater emphasis given to those details included in the interactive feature; and the improved attentiveness produced by questioning students about material just presented.

The positive results of the study and its fairly narrow scope invite further research on the impact of the interactive feature. Our program highlights only ten details from an eighteen-minute presentation. Would our results have been altered if, given the same test, the experimental group had been exposed to a higher number of question and answer slides? Intuition suggests that there must be a point at which the addition of further question-and-answer slides becomes counterproductive. But as yet we do not know when that point is reached.

Another unanswered question concerns the durability of the effect. Does the use of an interactive feature assure better retention of learning over several weeks?

Despite the need for further research, our findings at least suggest that, where librarians want to improve immediate recall of certain key points in their slide/tape programs, they might well consider using series of question-and-answer slides to achieve their goal.

## REFERENCES

1. The findings of our study with its large sample population corroborate those of Ralph Parsons' smaller study, *A Comparison of Interactive and Non-Interactive Audio-Visual Programs* (Arlington, Va.: ERIC Document Reproduction Service, ED 157 508, 1978).

JANELL RUDOLPH AND KIT BYUNN

## Academic Library Newspaper Collections: Developing Policy

In the fall of 1979, facing budget and space restrictions, the Periodicals Department of Memphis State Libraries began to review current periodical subscriptions in an attempt to cancel titles that were no longer needed to support the university's curriculum. Newspaper subscriptions were included in this review. However, because the guidelines for selection and retention of newspaper titles were different from those governing other periodicals, a special committee was appointed in January 1980, to formulate a written policy to guide the Periodicals Department in its review of the newspaper collection and to establish official library policy concerning newspaper holdings. The director of libraries specifically instructed the committee to consider in its charge the needs of (1) MSU students and faculty for current information that relates to the curriculum; (2) journalism students for examples of journalistic styles; (3) foreign-language students for current reading matter in foreign languages; (4) a variety of editorial positions; and (5) domestic and foreign students who desire to have news from their hometowns or countries.

The committee worked closely with the head of the Periodicals Department in the formation of the newspaper policy, using departmental guidelines as a basis for its study. The first task of the committee was to study

existing newspaper subscriptions, including those in microform, to determine their relevance to curriculum support and to student-faculty demand. To assist this examination, the staff in the Periodicals Department and in the Microforms Departments made a four-month statistical survey of all newspaper titles used. The committee combined these usage data with a summary of the geographic origins of students enrolled in MSU for the last four years, which provided an objective measure of the interests of the university community. The second step in the committee's action was to study existing policies governing newspaper subscriptions in other university libraries. A survey of published literature, which involved both manual and online searching, was not helpful. There seemed to be very little, if anything, written about the acquisition and retention of newspapers by university libraries. Thus the committee decided to survey libraries similar in function and size to Memphis State University Libraries.

The survey was conducted through a nine-part questionnaire sent to twenty-eight other university libraries in the southeastern United States. The questions were designed to determine the number and range of newspaper titles the various universities considered important to their needs as well as the criteria used to define those needs. Another objective of the questionnaire was to find out how other libraries handled space problems, i.e., their policies on retention of newspapers in original format and in microform. A specific list of newspaper titles, U.S. and foreign, was included in order to compare cur-

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*Janell Rudolph is reference librarian and instructor, Kit Byunn is special projects librarian and assistant professor, Memphis State University Libraries.*

rent subscriptions and microform holdings among the universities and with MSU subscriptions and holdings. The questionnaire also sought to determine how many libraries have policy statements on newspaper selection and requested copies from those who answered affirmatively. A total of twenty-three questionnaires were returned, an 85 percent response rate.

#### SURVEY SUMMARY

Table 1 shows the total number of newspaper titles currently received by each of the responding libraries, and the number and percentage of those titles that are printed in the English language. The mean number of newspaper subscriptions is ninety-nine; the median is eighty-five newspaper titles. The libraries are ordered by the number of titles received.

In order to determine how the libraries select the titles for their newspaper collections, the committee asked that they rank in order of importance certain selection criteria. Table 2 shows that from the given criteria, curriculum support was considered to be the most important factor in the selection process, while recreational interest was the least important criterion for most of the libraries surveyed.

TABLE 1  
NUMBER OF NEWSPAPER TITLES  
CURRENTLY RECEIVED

Library	Total Number of Titles	Titles in English	
		Number	Percent
1	327	277	84.7
2	257	144	56.0
3	143	135	94.4
4	139	107	77.0
5	137	132	96.4
6	127	80	63.0
7	119	96	80.7
8	102	63	61.8
9	100	65	65.0
10	93	68	73.1
11	92	75	81.5
12	85	15	17.6
13	81	50	61.7
14	76	57	75.0
15	72	13	18.1
16	58	50	86.2
17	50	41	82.0
18	47	29	61.7
19	44	40	90.9
20	41	29	70.7
21	40	37	92.5
22	29	24	82.8
23	19	16	84.2

The surveyed libraries order newspaper titles in microform for the same reasons they order newspapers in original form. When asked to rank selection criteria for newspaper titles in microform, the respondents again cited curriculum support as the most important factor and recreational interest as least important, as shown in table 3.

In its task of creating a policy for newspaper acquisition and retention, the committee was concerned about the university's responsibility to provide titles for occasional need. Can the library depend upon interlibrary cooperation for this service? A large majority of the libraries surveyed share newspapers in microform, as the data in figure 1 demonstrate. Cooperative acquisition with regional libraries is not the current practice of most of these libraries, but a large percentage of these indicate that they do favor this method of providing needed newspapers, as shown in figure 2.

TABLE 2  
CRITERIA FOR SELECTION OF  
CURRENT NEWSPAPER SUBSCRIPTIONS

Criterion	Mean Rating	Standard Deviation
Curriculum support	8.23	1.59
Faculty request	7.33	2.26
Index availability	6.55	2.86
Cost	5.95	2.30
Other*	5.78	3.23
Local interest	5.64	2.65
Potential usage	5.47	2.64
Regional interest	5.45	2.13
Student request	5.20	2.08
Recreational interest	2.71	2.39

\*Quality of newspaper, range of coverage, availability in area libraries, availability of film were cited criteria.

TABLE 3  
CRITERIA FOR SELECTION OF  
NEWSPAPERS IN MICROFORM

Criterion	Mean Rating	Standard Deviation
Curriculum support	8.18	2.05
Faculty request	7.45	2.40
Index availability	7.32	2.56
Cost	6.20	2.46
Usage of hard copy	5.95	2.73
Other*	5.33	2.87
Local interest	5.10	2.91
Regional interest	5.00	2.29
Student request	4.74	1.89
Recreational interest	2.39	2.51

\*Local availability, national recognition for quality, responsibility of a joint program with neighboring university were cited criteria.

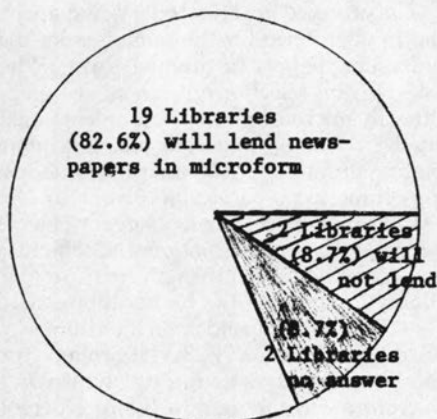


Fig. 1  
Interlibrary Loan Policy for Newspapers in Microform

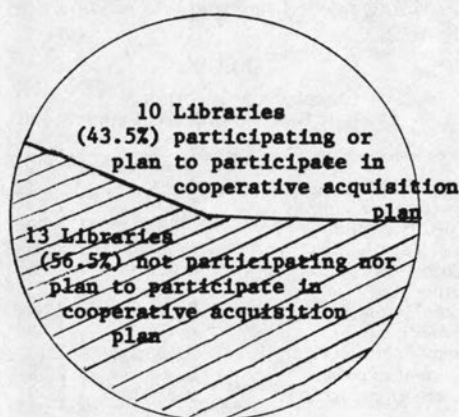


Fig. 2  
Participating in or Planning to Participate in Cooperative Acquisition Plan

Storage and accessibility of current newspapers was another concern of the committee. How long should the library keep newspapers in their original form? Table 4 shows that most of those libraries surveyed did not keep them over a year.

Since the objective of the committee study was to write a newspaper policy, the libraries being surveyed were asked whether they currently had such policies, and, if so, were requested to enclose a copy with the completed questionnaire. Only eight responded that they did have a policy statement on the selection of newspaper titles, a ratio of 34.8 per-

TABLE 4  
RETAINED PERIOD OF BACK ISSUES  
NOT ON MICROFORM

Period Retained	Number of Libraries	Percent
2 months or less	6	26.1
More than 2 months to 1 year	11	47.8
More than 1 year	2	8.7
Other*	1	4.3
No answer	3	13.0

\*One year for local and foreign language, one month for others.

cent. A majority of the respondents said that they did not have a policy statement (60.9 percent), while one respondent did not answer the question (4.3 percent). The committee received from this survey seven policy statements, a copy of another newspaper policy committee report, a set of guidelines, and a report on newspaper holdings. These documents and the information about other university library newspaper collections gained from the survey were very helpful to the committee in formulating a newspaper policy for MSU Libraries that is both satisfactory and practical.

#### MSU LIBRARIES NEWSPAPER SELECTION POLICY

##### I. Definition of newspaper

The Library of Congress definition of newspaper shall be used in establishing university policy governing library newspaper acquisition: "those publications issued on newsprint and containing general news coverage rather than being oriented toward specific subject matter." (*Serials: A MARC Format*, Washington, D.C.: Library of Congress, 1970, p.16.)<sup>1</sup> Special-interest publications, such as *Women's Wear Daily*, will be considered as a special category of periodicals and will not be considered as part of the newspaper selection policy.

##### II. Purpose of newspaper collection

The newspapers held in the MSU Libraries collection will be those that are (1) required to support teaching, research, and public service functions of the university; (2) known to provide examples of editorial and journalistic excellence; and (3) chosen to give depth and breadth of regional, national, and international news coverage.

##### III. Criteria for selection

While the library recognizes the desirability of subscribing to hometown or home-country newspapers or to other newspapers of personal interest to faculty, staff, and stu-



dents, these factors cannot serve as the sole justification for acquisition or retention of a particular newspaper. Selection of titles will be based upon the stated purpose of the newspaper collection as well as upon the following specific criteria:

A. Geographic representation

1. City: the major daily newspapers published in Memphis
2. State: at least one major paper from each of the four largest metropolitan areas of Tennessee with selective coverage of smaller cities
3. Region: major newspapers in the Lower Mississippi Valley (those states bordering the Mississippi River south of its junction with the Ohio River)
4. North America: at least one major newspaper from the major geographic regions of the United States and Canada, selected in the following priorities, and at least one major paper representing Mexico:
  - a. U.S.: Southeast, Midwest, Southwest, Northeast, Northwest
  - b. Canada: Ontario, Quebec, West Canada
5. International: newspapers shall be selected only on the basis of giving curriculum and research support, having international reputation, and availability of back files and indexes.

B. Editorial and journalistic excellence based upon authoritative selection tools

1. Titles that provide a balanced collection of diverse editorial viewpoints representative of major demographic groups in North America
2. Award-winning newspapers and other titles recognized for journalistic excellence by journalism-department faculty

IV. Gifts

Gift newspapers will be accepted by the Periodicals Department and will be added to the collection as dictated by departmental procedures.

V. Indexes

Acquisition of newspaper indexes will be primarily determined by Reference and Periodical departments.

VI. Retention

Current editions of newspaper titles retained in microform back files will be kept in the Periodicals Department until the microform copies are added to the collection. Other newspapers will be kept for three months.

VII. Procedure for requisition

The current procedure for requesting and

ordering periodicals will be used for newspaper requisition.

VIII. Microform collection

Complete back files of newspapers in microform should be acquired if available for two Memphis daily newspapers, for those regional, national, and international titles that have been consistently and heavily used in support of research and teaching, and for those for which indexes are available. Incomplete back files of newspapers in microform may be acquired in support of specific research and curricular needs only if these needs cannot be met through normal interlibrary loan channels.

IX. Cooperative collection development

MSU Libraries should work cooperatively with other Memphis libraries to establish newspaper back files in microform and accessible indexes for those titles.

X. Ongoing evaluation

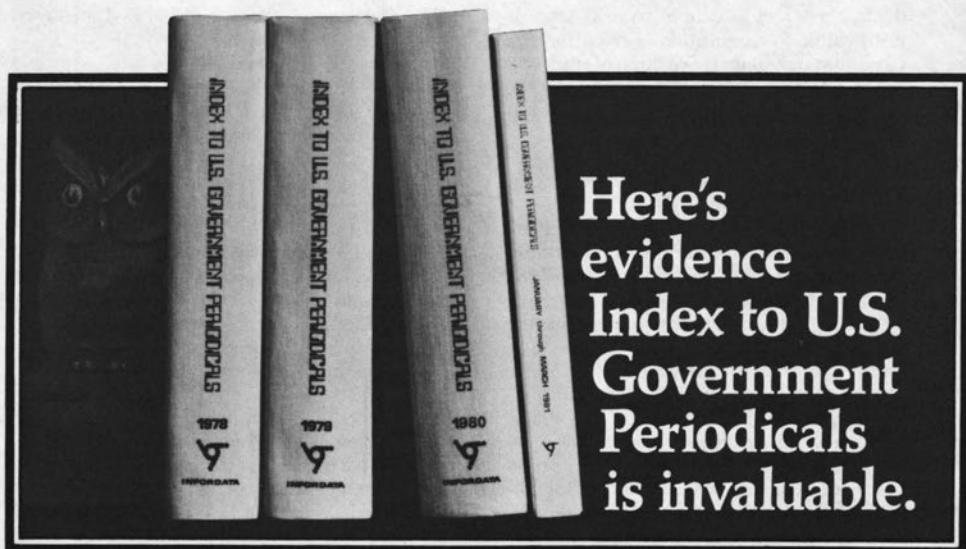
Periodic review of the newspaper collection should be conducted by the Periodicals Department of the library.

## CONCLUSION

Developing this policy has helped the librarians of Memphis State Libraries to look objectively at the acquisition and maintenance of the newspaper collection. They were forced to define parameters, state objectives, and set standards by which to measure the newspaper collection. This self-study, along with the survey of other libraries and the departmental usage statistics, created an awareness of specific needs, needs that became apparent as the proposed newspaper policy evolved. The library did have to cut titles in order to conform to the stated purpose of the collection, but it also had to add titles to measure up to the policy standards. Therefore, implementation of the proposed newspaper policy would require a budget review and a shifting of expenditures. What has been gained? The library, so it seems, is back to square one: review and shift. The difference now is that the moves have purpose and direction. In these times, that is a vital difference.

## REFERENCE

1. This portion of the MSU Libraries Newspaper Policy was adapted from the newspaper policy of the University of Tennessee Library in Knoxville, Tennessee. Other libraries that shared policy statements, reports, and guidelines were also very influential in the development of the MSU Libraries Newspaper Policy.



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## BOOK REVIEWS

Smalley, Donald A. et al. *Technical Report on Linking the Bibliographic Utilities: Benefits and Costs*. Submitted to the Council on Library Resources September 15, 1980. Columbus, Ohio: Battelle, 1980. 169p. plus appendixes.

Jones, C. Lee. *Linking Bibliographic Data Bases: A Discussion of the Battelle Technical Report*. Washington, D.C.: Council on Library Resources, Inc., 1981. 28p.

It may be difficult to realize, especially for libraries and librarians for whom shared cataloging and interlibrary loan through bibliographic utilities have become a way of life, that these operations are barely a decade old. OCLC, the first national utility, began its online service outside of Ohio in 1971; the Research Libraries Group was formed in 1974 and established the RLIN system four years later; WLN, the Washington Library Network, was founded in 1976 and became self-supporting in 1979. Given this relatively short history, why, one wonders, does it seem that we have been talking about linking the bibliographic utilities for what seems like an eternity? One answer may be that this issue is of such momentous importance and has such potential benefit both to libraries and to patrons, that frustration over the lack of movement has produced a weariness that defies time. In the report of Battelle on the technical and economic feasibility of linking the biblio-

graphic utilities, the library world has a wealth of information to motivate it toward this essential goal; it remains to be seen whether there is sufficient energy and imagination to overcome the intellectual and political inertia that, up to now, has characterized many attitudes about linkage.

The Battelle study, commissioned by the Council on Library Resources, addresses two sets of questions. The first deals with the effects of linking on libraries and their users, and examines issues such as whether there is sufficient reason to link bibliographic utilities and, if so, the possible benefits in three areas of service: shared cataloging, interlibrary loan, and reference searching. While not technically a utility, the Library of Congress, because it is the single largest producer of original cataloging records in machine-readable form and because online access to its files is possible although not now available, has been included as a fourth element in the study. Since the CLR contract specified that the report was to deal only with U.S. bibliographic utilities, the University of Toronto Library Automation Systems (UTLAS) is not included.

The second part of the report covers questions about the technical feasibility of establishing a link and the several alternatives for accomplishing this. Battelle focuses its technological analysis on three alternatives deemed most promising: tape exchange of requested records, online access using the "na-

tive mode" of the linked utility, and online access with automatic translation of searches and responses.

The methodology used in the first part of the report, that dealing with the benefits of linkage, was essentially statistical sampling designed to see what the effect on the "hit rate" would be if a library or individual user had access to all four utilities instead of one. The results in each of the three areas studied indicate that there would be substantial advantages for libraries if they had access to multiple utilities. The combined hit rate in cataloging, for example, was 96 percent as compared to individual rates of 93 percent on OCLC, 87 percent on WLN and RLIN, and 86 percent on LC. Clearly, as Battelle points out, "cataloguers using RLIN, WLN, or LC could have added about 10 percentage points to their current title hit rates if the four data bases had been linked at the time of the study . . . cataloguers in OCLC libraries could have gained about 3 percentage points." Data for interlibrary loan produces similar results with the major benefits accruing to the younger utilities (RLG and WLN). The linkage of utilities for reference searching would also increase the likelihood of success with, as Battelle points out, greatest benefit for research libraries. Cost avoidance is particularly significant in cataloging record linkage, somewhat less so in interlibrary loan. Cost savings for individual libraries are probably offset by increased costs to the utilities (inevitably passed along to member libraries), but the net effect of linkage clearly produces a bottom-line benefit.

Following a detailed discussion and analysis of the several means of actually linking the utilities, Battelle concludes that the preferred form is online access with automatic translation of messages. This conclusion is based primarily on the fact that it provides the highest level of convenience and immediacy of access for the user.

The Battelle report concludes with a set of three recommendations. The first is that there be a continued analysis of the economic and technical implications of linkage using a computer model, BIBLINK, developed during the course of the study. The second is that work should be undertaken immediately to connect the OCLC, RLG, WLN, and LC host computers in order to establish an on-

line, translation mode linkage by 1984. The third recommendation calls for the establishment of committees with representatives from all four organizations to (1) determine requirements for the user interface and (2) develop standards and protocols.

A second document that must be considered required reading for those involved with or interested in the question of utility linkage is C. Lee Jones's discussion of the Battelle report. Jones, program officer at the Council on Library Resources with particular responsibility for the Bibliographic Services Development Program (BSDP) and, consequently, for oversight of the Battelle study, provides useful, important background to the report and sets the national context in which it should be evaluated. The Jones report is also valuable for its careful analysis of the problems that will be encountered in proceeding along the lines suggested by Battelle. He rightly points out that the costs involved in establishing linkages must be borne cooperatively by utilities, participating libraries, and funding sources and that redeployment of existing resources may be one of the ways to accomplish this. Finally, Jones is correct in emphasizing the need for further analysis of areas covered in the Battelle report and of other topics such as a centralized pool of little-used bibliographic records. His recommendation of next steps has four elements: (1) convene a meeting of utility managers to discuss linking alternatives; (2) continue to work toward standardization of formats and protocols; (3) use BIBLINK to study other alternatives; (4) investigate other possibilities such as direct terminal access to any utility or establishment of a central pool of records.

The obvious question now is "what happens next?" The Battelle report together with the Council on Library Resources discussion paper provides justification for proceeding with all deliberate speed toward the establishment of linkages between the U.S. bibliographic utilities. Despite the limitations of the Battelle study with regard to options, size of sample, and number of libraries involved, and despite the need for further analysis of other means for accomplishing linkage, it still seems desirable and practicable to proceed. The potential benefit to libraries and their patrons is evident although one may argue about how development costs should be dis-



tributed. Libraries can increase access to bibliographic information through linkage even though the immediate benefits may vary from utility to utility. The Battelle report can either serve as a motivating force to move ahead or be relegated to the shelves as "one more study." One can only hope at through the informed leadership of those involved—the stakeholders as it were—that the necessary steps will be taken to move toward the goal of linkage of bibliographic utilities.—*Jay K. Lucker, Massachusetts Institute of Technology Libraries, Cambridge, Massachusetts.*

**Academic American Encyclopedia.** Princeton, N.J.: Aretê Publishing Co., 1980. 21V. \$400. LC 79-27430. ISBN 0-933880-00-6.

**Academic American Encyclopedia (AAE)**, a recent contender in the adult general encyclopedia market, appears to have a competitive edge in terms of currency, contemporary biography, and graphics. It is well researched, well written, and a strikingly attractive set. In comparison to similar multi-volume encyclopedias, AAE is noticeably

more compact. Its twenty-one volumes contain 32,000 articles, 16,000 illustrations, and 250,000 index entries (compared, for example, to *Americana's* thirty volumes with approximately 54,000 articles, 22,000 illustrations, and 353,000 index entries). The reduction in bulk has been accomplished without a significant loss of detail. Rather, AAE has attempted to present essential information succinctly, without compromising depth of coverage. In addition, its short-entry format (half the articles are under 500 words) makes it particularly appropriate for library "ready reference" collections.

AAE's intended audience spans junior high through college age and the "inquisitive adult." The text has a reasonable level of technical and scholarly sophistication, but maintains accessibility as well. These parameters place it somewhere in the middle of a complexity/accessibility continuum between *World Book* and *Britannica*, comparable to *Encyclopedia Americana* or *Collier's*. In short, it is neither elementary nor overwhelming.

Aretê has amassed a board of advisers and

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2,250 contributors who show a balance of pure and applied scholarship. Although a sizable number of the academic contributors are at assistant and associate professor levels, the institutional affiliations are impressive. A few notable authorities are represented in "Aggression" and "Racism" by Ashley Montagu, "Speech Development" by Roger Brown, "Ernest Hemingway" by Carlos Baker, and "Maps and Mapmaking" by former LC Geography and Map Division Chief Walter W. Ristow. Ninety percent of the articles are written by outside scholars; 75 percent of the entries are signed.

Currency is AAE's forte. Many 1980 events are covered—e.g., the winter Olympics, Zimbabwe's independence, Indira Gandhi's victory. The Iran hostage situation, Love Canal, and Qaddafi's sending troops to Uganda are further examples of current topics. Although statistical data are generally recent (e.g., inflation and U.S. population estimates are from 1979), there are a few surprises such as 1975 data on airports and 1976 figures for labor union membership. Deaths which occurred in early 1980 are reported inconsistently; Jesse Owens, Jean-Paul Sartre, and Tito are covered, while Cecil Beaton, Alfred Hitchcock, William O. Douglas, and Al Capp (Nov. '79) are overlooked.

Another strength is AAE's coverage of contemporary biography; 35 percent of the entries are biographical. Using a group of 100 twentieth-century scholars, writers, celebrities, and public figures sampled from AAE, a cross-check in *Americana* (1980 edition) turned up only 60 percent. AAE alone included such personages as Maya Angelou, Diane Arbus, Jack Anderson, Barry Commoner, Joan Didion, Jack Kerouac, Hans Küng, David Mamet, John McEnroe, and Carl Sagan.

The key to understanding the telescopic approach of *Academic American's* coverage is summed up in one of its stated goals—i.e., AAE attempts to present a "readily intelligible general overview of a subject that does not compel the reader to grasp intricate subtleties or wade through drawn-out historical analysis." Clearly the articles can best serve as aids in definition and as starting places for further investigation. Although AAE's brevity may fail to capture adequately the nuances that only length can bring to a subject,

its format does provide quick and easy access to concise information. One must rely, however, on the index and textual cross-references to maintain the integrity of the overall coverage of a topic.

In contrast to other encyclopedias, there is considerably less emphasis on typical "big-spread" topics such as geography and history. Geographical coverage accounts for less than 15 percent of the entries. For example, while *Americana* devotes more than fifty pages to the USSR's geography, history, and culture, AAE's coverage is only eleven pages for the main geographic entry, with an additional twenty-two pages covering separate but related entries (Russian art, literature, music, and revolutionary history). As stated in the preface, the allocation of disciplinary coverage is roughly 36 percent for humanities and arts, 35 percent for science and technology, 14 percent for social science, 13 percent for geography, and 2 percent for sports and contemporary life.

A more thorough review of specific topics in the major disciplinary groups revealed a consistently high level of attention to essential detail. The entries on American literature cover the necessary literary periods, figures, and movements. Popular as well as traditional genres are discussed. In fact, the coverage of the former is superior to *Americana* and *Britannica*, with more extensive discussions of detective fiction, gothic romance (including the classic type), science fiction, and westerns. More than fifty separate entries for mystery and suspense authors are included, twenty-six for science fiction. In addition, the inclusion of separate title entries for major literary works is a useful feature. Biographical entries for major and well-known writers are abundant. Given the particularly good coverage of contemporary authors, however, the absence of entries for Kenneth Koch, Charles Bukowski, Robert Coover, and Stephen King is surprising.

Science and technology coverage is exceptionally good. Definitions, although cogent, are quite technical and probably accessible only to the more sophisticated reader. AAE's article (and eleven index subheadings) on "Quarks," for example, is much more comprehensive than its rivals; both the research history and hypothesized new quark categories are discussed. Space exploration entries

are heavily illustrated and are authoritative, technical, and detailed. All space missions are reported, including mention of *Voyager I's* trip to Saturn (Nov. 1980) and space-shuttle specifications and plans. Articles on computer technology cover historical and current hardware developments well, but fail to give enough attention to aspects other than "number-crunching," such as computers and communications, database and file management, and the generic "personal computers."

In comparison, social sciences have received short shrift. Standard, curriculum-based topics are covered adequately, but theoretical applications, social implications, and interdisciplinary developments are inconsistently presented. For example, "Aging," "Life span," and "Geriatrics" entries together provide a reasonable discussion of basic topics concerning the elderly population, but the more recent emphasis on social gerontology is missing. Perhaps because psychology is an area with an unusually high number of subdisciplines, its coverage appears unnecessarily scattered and not amena-

ble to AAE's strict short-entry format. Although all branches of psychology receive some consideration, several significant themes are either absent (e.g., social learning theory and differential psychology) or not given sufficient elaboration (e.g., physiological psychology). A minor (but nevertheless misleading) error appears in the entry for "Concept Formation and Attainment": the text refers to learning theorists Clark Hull and Kenneth Smoke (actually Kenneth Spence). The coverage in economics is similarly segmented, although entries for more recent economic terminology (e.g., zero-based budgeting) are welcome.

Bibliographies accompany approximately 40 percent of the entries. Typically, citations are to recent (a large percentage are 1970's imprints), easily accessible, English language materials. Those bibliographies examined contained both standard works and recent critical overviews. The bibliography on "Intelligence," for example, includes a well-respected textbook, a current critical review, and several significant works representing opposing viewpoints on the heredity, race,

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and intelligence controversy (Dobzhansky, Jensen, Kamin, Loehlin).

The disjointedness in some coverage is obviously a function of the short-entry format, which, although useful for factual information, has its limitations for comprehensive study. In addition to relying on the extensive (67,000) textual cross-references, users will find the well-structured index essential in determining appropriate entries and in identifying the network of related entries for a topic. The index serves as a skeleton, the connecting framework, upon which to hang the full body of a discipline. Numerous subheadings appear under major headings, including biographic entries. Map location entries exist for places not included in the text, with longitude and latitude coordinates provided. A few idiosyncrasies are bothersome: internal prepositions are disregarded in alphabetizing multi-word entries, and acronyms are interfiled with other entries (e.g., CB after Cazenovia, N.Y.). Notations for bibliographies, illustrations, and maps are appended to main headings in the index—another useful feature.

AAE is a handsomely produced encyclope-

dia with outstanding use of graphic material. Illustrations and photographs (the majority in full color) are used liberally, yet judiciously, occupying about 33 percent of the available space. The use of cutaway models is particularly effective. The 1,110 maps were newly created by Rand McNally, R. R. Donnelley, and others. All illustrations have been reproduced clearly, without any "bleed-through" of color or print. The sixty-pound nonglare-surfaced paper has a pH value of approximately 7.0–7.5 (compared to approximately 5.0–5.5 for *Americana*) and, therefore, AAE's neutrality should contribute to good wearability.

A unique feature of AAE is the use of computer technology for all phases of production. The publisher expects to revise 20 percent annually. In addition, an AAE videotext system is currently being tested in Columbus, Ohio, via OCLC, Inc.'s "Channel 2000" and an online, full-text searchable version of AAE will be accessible through the New York Times Information Service sometime in the first quarter of 1982.

While some users may find the dictionary-like format disconcerting, AAE serves superbly as a quick reference tool. *Academic American* is rich in detail and is excitingly attractive, thus reaffirming that less can be more.—Wendy Pradt Lougee, *Brown University, Providence, Rhode Island. With the assistance of the Reference Department staff.*

Higham, Norman. *The Library in the University: Observations on a Service*. Boulder, Colo.: Westview Press, 1980. 205p. LC 80-51340. ISBN 0-86531-053-X.

In the author's words, his purpose is "to examine some of the services we offer and the procedures we carry out. . . . The book is designed for reading and questioning, rather than for study and note taking." Every aspect of university library work is covered, with chapters devoted to the standard elements of finance selection, acquisition, cataloging, services, staffing, interlending, storage, library buildings, and cooperation. The author's experience is in British libraries, but the fundamentals he covers are universal.

As thorough as he is, the author hews to a fundamental description of university library operations and a delineation of the issues and conflicts we face. In the main, the author's

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presentation is quite mundane and presented in the simplest analytical terms. He tells those of us who are reasonably well schooled in university librarianship what it is we already know. It is almost as if he were lecturing to faculty members, using the least sophisticated explanations of librarianship and university library problems in order to explain what we do and the dilemmas we face in adopting alternatives in our various operations.

There is little hint in the author's text of new futures for the university library, even though the author admits this is an exciting time for university libraries. In the chapter on computer applications, for example, the author rightly notes that it is improper to design computer systems to reproduce the practices that we previously turned out manually. But having opened the door for some potentially exciting analytical comments, he merely says that we should analyze our manual system and decide what it is we want done and then design a new system.

The author shows considerable skill in covering the main points of the operation of the university library. This is, however, his personal statement: there are only eight footnotes in the entire book, these appearing in the first few pages. There is no guidance as to how we can expand our understanding of the various areas of the university librarianship through further reading.

In spite of the fact that the author claims this is not a textbook, it might best be used as an introductory reading for people without library-school training, who want to work in a library. At that, it will not tell them how to perform any tasks, but will merely offer a generalized explanation of the fundamentals and the philosophy of university library work. The author won't offend anyone with his conventional analysis, but also he won't stimulate much provocative discussion given his pedestrian presentation.—*Russell Shank, University of California at Los Angeles.*

Queen, Daniel. "Headphones for Library and Educational Use." *Library Technology Reports* 16:561-612 (Nov.-Dec. 1980). Single issue \$40. ISSN 0024-2586. Available from: American Library Association, 50 E. Huron St., Chicago, IL 60611. Although test reports for stereophonic

headphones are frequently published in such places as *High Fidelity* and *Stereo Review*, reports for monaural sets are seldom written. For this reason, *LTR's* issue on monaural headphones most frequently used in libraries is especially welcome. The report was prepared by Daniel Queen, a noted audio consultant. Some nineteen different models were included in the test program including all monaural headphones listed in the 1978-79 *National Audio Visual Association Directory*. (Most of these same models plus a few additional ones are included in the 1980-81 *Directory* with the exception of the Superex, which is not listed.)

The tests focused primarily on sound reproduction abilities and electrical characteristics. The comparative durability and reliability of the models was not tested. Although no attempt was made to rank the earphones, a scale was devised for rating sound quality. One can easily compare the sound ratings and the prices.

Queen describes in some detail the procedures used in testing the headphones. For purposes of determining sound quality, he measured roughness (quality of hearing individual voices clearly), articulation (quality of hearing differences in words), harshness (a measurement of auditory fatigue), and a composite sound rating that takes into account all of the other sound qualities. The other data given in the reports regard safety factors that are critically important when selecting headphones. These safety factors include measurements for impedance, sensitivity, exposure level with 10-volt imprint, and series resistance. Queen carefully explains in the introductory material the method used and purpose for each of the safety tests.

A review of this report will be vital for anyone intending to purchase monaural headphones. Sound quality data plus a review of the safety factors and one's own estimation of the model's durability and reliability will provide a good basis for selecting the desired headphones.

A worthwhile companion article in this same issue of *LTR* provides test reports of portable microfiche readers done by the National Reprographic Centre for Documentation.—*David B. Walch, California Polytechnic State University, San Luis Obispo, California.*

## ABSTRACTS

*The following abstracts are based on those prepared by the ERIC Clearinghouse on Information Resources, School of Education, Syracuse University.*

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*Further information on ordering documents and on current postage charges may be obtained from a recent issue of Resources in Education.*

**Report on the Development of Six Point-Of-Use Audio-Visual Library Instructional Programs.** By Myoung Chung and others. New Brunswick, N.J.: Rutgers State Univ. Libraries, 1980. 30p. ED 202 466. MF—\$0.83; PC—\$3.32

Six point-of-use audiovisual programs were developed by librarians as part of a library instruction program in Alexander Library at Rutgers University to illustrate the basic skills needed in using the library's print collections in the social sciences and humanities. Topics for the 16mm filmstrip cartridges were (1) Tour of Alexander Library; (2) Using the Periodical Indexes; (3) Using Psychological Abstracts; (4) How to Use the Card Catalog; (5) Government Publications in Alexander Library; and (6) Using Social Sciences Citation Index. The development process is described, including the production of software—selection of topics, scripts, photography, taping, and laboratory conversion of 35mm slides/tapes to filmstrip cartridges; selection and modification of equipment; and user evaluation of the programs. Users over the summer of 1980 indicated that, while they were pleased with the programs, an unexpectedly high number of them would prefer printed instructions, and they would be interested in programs on non-book materials, including microforms. User evaluation data are reported, and a copy of the questionnaire is appended.

**Instructing the Academic Library User: Historical Background and Utilization of Audiovisual Presentations.** By Marilyn P. Whitmore. 1979. 20p. ED 202 458. MF—\$0.83; PC—\$1.82.

A brief sketch of the trend in bibliographic instruction from the thirties through the seventies in-

troduces this review of the literature on applications of instructional media in programs for academic library users. Formats discussed include television, programmed instruction, multimedia presentations, and slide/tape presentations. The slide/tape program is seen to be the most popular approach, and it is discussed in more detail, including advantages, disadvantages, production time, length of presentations, evaluation, and duplication of efforts. A list of 70 references is provided.

**Education for the Research Library Professional: Minutes of the Ninety-Seventh Meeting, October 15-16, 1980 in Arlington, Virginia.** Washington, D.C.: Association of Research Libraries, 1980. 108p. ED 202 483. MF—\$0.83; PC—\$7.82.

These proceedings of the Association of Research Libraries (ARL) meeting on the education of research library personnel contain the following papers: "The Conant Report and Its Implications for Academic and Research Libraries," by Ralph W. Conant; "Library Education—State-of-the-Art," by Robert O. Steuart; "Professional Education and Training—A New CLR Program," by Warren J. Haas; and "Library Education—The Director's Point of View," by Margot B. McBurney. Discussion and comments from the floor follow the papers. Details of the business meeting are provided, and appendixes include various ARL committee reports and membership data.

**The Effective Use of Automation in Wisconsin Libraries, 1981-1985.** By Hank Epstein and Susan Baerg Epstein. Wisconsin State Department of Public Instruction, Madison Division of Library Services. Costa Mesa, Calif.: Information Transform Industries, 1980. 136p. ED 202 489. MF—\$0.82; PC—\$9.32.

Intended to provide recommendations that will permit Wisconsin libraries to make more effective use of current automated systems, select the most appropriate new systems, and provide a basis for statewide library automation planning, this report describes the current and future use of automation technology in that state's libraries. Its four major sections discuss the following: (1) highlights of the report and the report audience; (2) the existing automation environment in Wisconsin, online catalogs, and a statewide database; (3) current major commercial and not-for-profit automated services and planned extensions to these services, including circulation services, cataloging systems, acquisitions systems, serials systems, and search services, and (4) a five-year plan defining the specific actions, projects, committees, and task teams needed to carry out the report recommendations.

## OTHER PUBLICATIONS OF INTEREST TO ACADEMIC LIBRARIANS

*Africa Index to Continental Period Literature*. no. 3, covering 1978. Ed. by Colin Darch and O. C. Mascarenhas. Munich: Hans Zell Publishers, an imprint of K. G. Saur, 1981, 191p. \$62. ISSN 0378-4797. (Distributed in the Western Hemisphere by Gale, Detroit.)

*American Prose and Criticism, 1900-1950: A Guide to Information Sources*. Ed. by Peter A. Brier. Gale American Literature, English Literature, and World Literatures in English Information Guide Series, V.35. Detroit: Gale, 1981. 242p. \$38. LC 74-11520. ISBN 0-8103-1214-X.

*Antislavery Newspapers and Periodicals*. V.III (1836-1854) Ed by John W. Blassingame, Mae G. Henderson, and Jessica M. Dunn. Boston: G. K. Hall, 1981. 557p. \$80 LC 79-20230. ISBN 0-8161-8163-2.

Arneson, Erne Joan and Milligan, Stuart. *Index to Audio Equipment Reviews, 1980*. Music Library Association Technical Reports, no. 10. Index is intended for unsophisticated audio equipment buyer and contains access to reviews of commercial home audio products. Philadelphia: Music Library Assn., 1981. 24p. ISSN 0277-8424, 0094-5099.

*Aslib Directory, V.2: Information Sources in the Social Sciences, Medicine and the Humanities*. Ed. by Ellen M. Codlin. London: Aslib, 1980. ISBN 0-85142-130-X.

*Audio-Visual Materials for Higher Education, 1981-82*. Update edition. Ed. by James Ballantyne. London: British Universities Film Council, 1981. 110p. £8. ISBN 0-901299-28-6. (Available from Publications, British Universities Film Council, 81 Dean St., London W1V 6AA U.K.)

*Author's Names: An Authoritative Listing of Personal and Corporate Names*. New York: Bowker, 1981. A standard version based on LC cataloging of 90,000 personal and corporate names found in 140,000 *Books in Print* 1980-81 entries. 2,096p. \$125 hardcover. ISBN 0-8352-1377-3. ISSN 0000-0639.

*Bibliographies and Lists of New York State Newspapers: An Annotated Guide*. Compiled by Paul Mercer. Albany, New York: The Univ. of the State of New York State Education Department, 1981. 79p. \$3. Available from Gift and Exchange Section, New York State Library Cultural Education Center, Empire State Plaza, Albany, NY, 12230.

*Bookman's Price Index: A Guide to the Values of Rare and Other Out-Of-Print Books*. V.22. Ed. by Daniel F. McGrath. Detroit: Gale, 1981. 866p. \$94. LC 64-8723. ISBN 0-8103-0622-0.

Casciero, Albert J., and Roney, Raymond G. *In-*

*troduction to AV for Technical Assistants*. Littleton, Colo.: Libraries Unlimited, 1981. 250p. \$23.50 U.S., \$28 elsewhere; paper: \$16.50 U.S., \$20 elsewhere. LC 81-13690, ISBN 0-87287-232-7; -281-5 paper.

*Catalogue of British Official Publications Not Published by Her Majesty's Stationery Office (HMSO)*, 1980. Cambridge, England: Chadwyck-Healey Ltd., 1981. The majority of the publications listed are available from the publishers on microfiche. 260p. \$190. ISBN 0-85964-101-5. ISSN 0260-5619.

*Census '80: Projects for Students*. Comp. by College Curriculum Support Project, Bureau of the Census, U.S. Department of Commerce, 1981. A booklet of census-related classroom exercises and projects designed for instructional purposes. 104p. \$4.50. LC 81-60018. (Available through Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)

*Continuing Education: A Guide to Career Development Programs*. 2d ed. Syracuse, N.Y.: Gaylord Professional Publications, 1981. 680p. \$59.95, plus .50 postage and handling. LC 81-82781. ISBN 0-915794-47-0.

*Current European Directories*. 2d. ed. A guide to international, national, city and specialized directories and similar reference works for all countries of Europe, excluding Great Britain and Ireland. Ed. by G. P. Henderson. Beckenham, Kent, U.K.: CBD Research Ltd., 1981. 415p. \$150. ISBN 0-900246-30-8. Distributed in North America by Gale, Detroit.

*Directory of Government Document Collections & Librarians*. 3rd ed. Government Documents Round Table, American Library Association. Ed. by Jane M. Mackay and Barbara L. Turman. Washington, D.C.: Congressional Information Service, Inc., 1981. 674p. \$32.50. ISSN 0276-959X

*The Directory of Mail Order Catalogs*. Ed. by Richard Gottlieb. Facts on File Edition. New York: Grey Publishing, 1981. 369p. \$85. LC 81-174. ISBN 0-87196-523-2.

*Divorce in the 70s: A Subject Bibliography*. Comp. by Kenneth D. Sell. Phoenix, Ariz.: The Oryx Pr., 1981. 191p. \$35. LC 81-38412. ISBN 0-912700-81-5.

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Prepared by Eldon W. Tamblyn

### FILING

Filing is word-by-word.

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Standard abbreviations are used except in titles. Names of some organizations, ALA, ACRL, LC, etc., are also abbreviated and are alphabetized as if spelled out.

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